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CONTENTS

	PAGE
Editorial Comment :	
Guggenheim Entries	711
"H.P." as Optimist	712
Revival of the Semi-rigid	712
A New Parnall Machine	713
Royal Aero Club Banquet to Schneider Team	714
Private Flying: Bristol Club's Official Opening	716
Light 'Plane Clubs	720
Airisms From the Four Winds	722
New British Airship	724
Guggenheim Competition Entries	725
"Aviation": By F. Handley Page	726
Royal Air Force	727
Royal Aeronautical Society and Inst. of Aeronautical Engineers	728

"FLIGHT" PHOTOGRAPHS.

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DIARY OF FORTHCOMING EVENTS

Club Secretaries and others desirous of announcing the dates of important fixtures are invited to send particulars for inclusion in this list:—

1927

Oct. 13	....	"The Practical Side of Performance Testing of Aircraft." Sqdn.-Ldr. T. H. England, before R.Ae.S. and I.Ae.E.
Oct. 20	....	Aero Golfing Soc. (Cillon Cup), Walton Heath.
Oct. 20	....	"Safety Devices for Aircraft." Mr. M. L. Bramson, before R.Ae.S. and I.Ae.E.
Nov. 3	....	Joint Meeting. "High Speed Compression Ignition Engine Research." Mr. H. B. Taylor, before R.Ae.S. and I.Ae.E.
Nov. 17	....	"The use of the Wind Tunnel in the Prediction of Aeroplane Performance." Mr. R. K. Pierson, before R.Ae.S. and I.Ae.E.
Nov. 24	....	"Modern Developments in Aircraft Instruments." Maj. C. J. Stewart, before R.Ae.S. and I.Ae.E.

EDITORIAL COMMENT.



ALTHOUGH the opening date for the receipt of applications for entry into the Daniel Guggenheim Safe Aircraft Competition was September 1, 1927, it is extremely gratifying to be able to record, as stated elsewhere in this issue of FLIGHT, that already no less than seven formal applications have been received by the organisers of the competition. Still more welcome is the news that out of the seven, five are from British aircraft firms. FLIGHT has already devoted a considerable amount of space, not only to the rules and regulations of the competition, but also, in THE AIRCRAFT ENGINEER technical supplement, to the views of British designers as to the possibility, or otherwise, of complying with the requirements with machines of more or less orthodox type.

The list of British entries published this week affords an interesting opportunity for speculation, since in only two cases is it possible to form an approximate idea of the general type of aircraft involved. That the machine entered by the Cierva Autogiro Co., Ltd., will be of the rotating wing type may be taken for granted, and in this connection, possibly it is significant that one of these machines has recently accomplished successfully a 50-mile cross-country flight, piloted by its inventor. When first commenting upon the Guggenheim competition, we pointed out that the requirements appeared to point to a machine of the rotating wing type, such as the "Autogiro," or else to a non-stalling machine such as the Hill "Pterodactyl." At the moment, no entry has been made by Capt. Hill, or by the Westland Aircraft Works, but as there is still nearly two years before the competition closes, it may be assumed as a probability that such an entry will be made.

The only other machine concerning which one can make a reasonable guess is the Handley Page entry. By now it appears to be an open secret that the latest Handley Page automatic wing tip slot has every appearance of definitely having overcome the trouble of control at and beyond the stall, and that without the slightest addition to the work of the pilot, and

without reducing to any appreciable extent the top speed performance of the machine. Combining with the new automatic wing tip control slot the normal Handley Page lift slot, angles of descent approaching somewhere near the vertical, certainly easily exceeding the steep angle demanded in the competition, should be readily attained, and it is permissible to assume that, whatever its general characteristics, the Handley Page entry will incorporate these features.

Concerning the remaining three entries, it is quite impossible to make any guess as to what the designers have up their sleeve. That three firms of such high standing as de Havillands, Glosters and Vickers should already have been in a position to apply for entry (the rules demand that fairly full technical particulars, as well as three-view general arrangement drawings, shall be supplied with the application) shows that these firms have already gone into the subject very thoroughly, and the very fact that they have come to the conclusion that it is possible to meet the very difficult requirements is in itself a promising sign. That any machine which succeeds in complying with all the requirements will have done a good deal towards greater safety is not to be doubted, and it is to be hoped that a good many more British firms will, after looking carefully into the matter, send in their applications for entry.

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"H.P." as Optimist Not for many years have we heard Mr. Handley Page in such optimistic mood as that which he displayed last week, when lecturing before "The Royal Aeronautical Society, with which is incorporated the Institution of Aeronautical Engineers" (not even Germany could rival this title for brevity and conciseness!). He visualised carrying 25 lbs./h.p., of which the useful load would amount to 14.85 lbs./h.p. for a duration of 4 hours, or 5.75 lbs./h.p. for a duration of 30 hours. When it is remembered that the latter figure is roughly what can be carried by present machines for quite a short duration of 3 hours or so, it will be seen that "H.P." was indeed in optimistic mood.

Whatever may be one's opinion of the possibility of attaining such figures, there is no denying the fact that by his lecture Mr. Handley Page did focus the attention on the details to which we *must* pay more attention if real progress is to be made, and thus his paper deserves more attention than a mere glance at the somewhat rosy picture might lead one to suppose.

The question of gearing is becoming vastly important, and whatever the difficulties, they must be overcome. With gearing should follow the variable pitch airscrew, and again, although presenting serious problems, we have no doubt that if the demand is strong enough and insistent enough, the problem will be solved.

On the aerodynamic side, Mr. Handley Page called attention to the urgent necessity of reducing head resistance by avoiding any excrescences from the fuselage, and few will deny that here a very considerable gain is to be attained. At the same time, it is essential that the user of the machine must be made to realise this necessity so that he does not demand equipment which will, as Mr. Handley Page so aptly put it, "add resistance to good and bad machines alike and tend to reduce all aircraft to one common level of inefficiency."

Although Mr. Handley Page was optimistic, we should hesitate to say that, on the aerodynamic side,

he went beyond the bounds of practical possibility. For instance, his "ideal figure" for η_D^L at climbing speed of 10 or 12 is surely not unattainable. In *THE AIRCRAFT ENGINEER* of April 28, 1927, we described and illustrated a design by Mr. James V. Martin, which gave a full-scale L/D of 18 or so. Now, even with present-day "inefficient" direct-driven airscrews, a value of η of 0.75 at climbing speed is not over-optimistic, which would give a figure of 13.5 as compared with Mr. Handley Page's 12 as an optimum value. The Martin P.M.3 is a twin-fuselage design, which rather facilitates the incorporation of retractable undercarriages. There might be certain objections to the type, but at any rate it shows what can definitely be attained. (The model tests were carried out by the Göttingen Laboratory, and are, therefore, above suspicion).

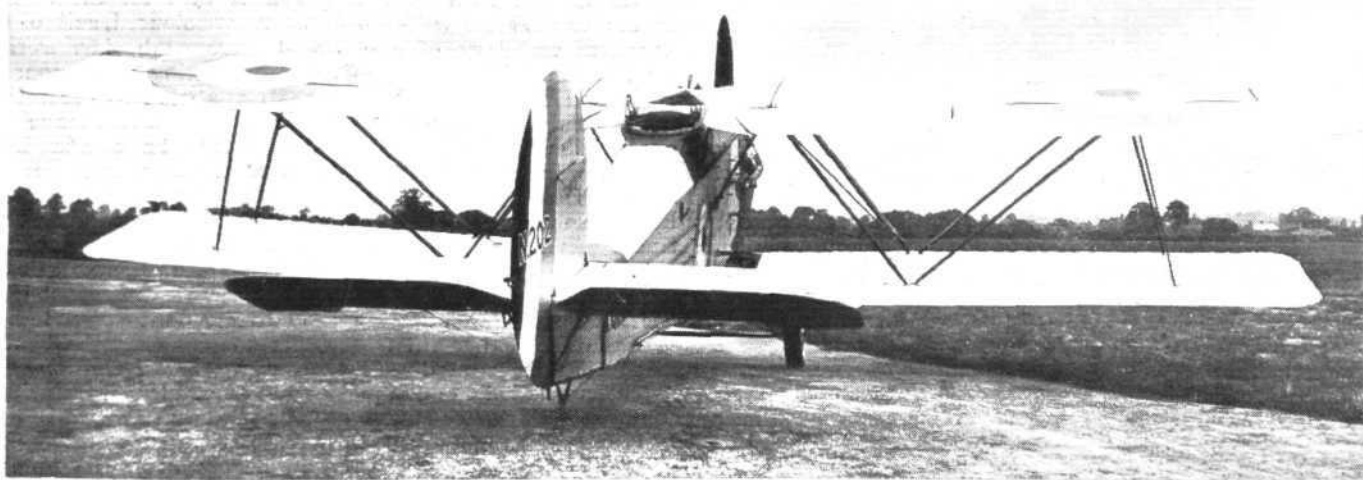
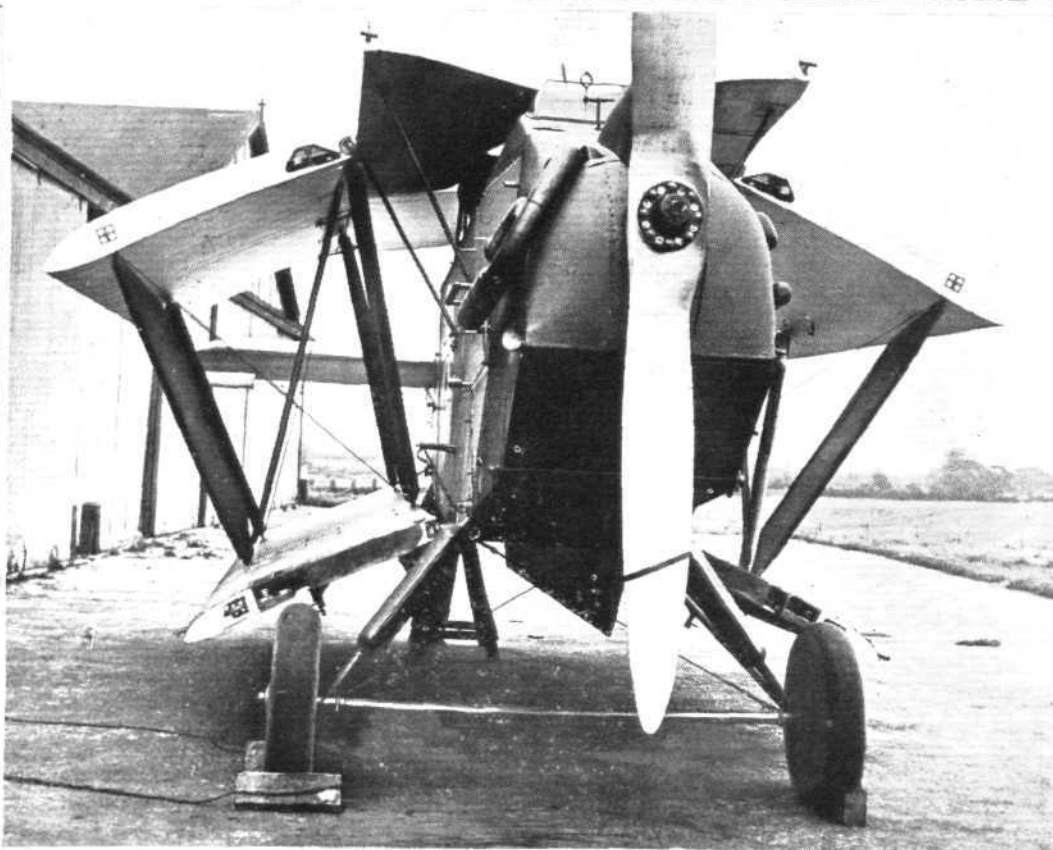
When he turned to the subject of subsidies, Mr. Handley Page was, as usual, very sound. We think that at the lecture he was rather misunderstood, as some of the remarks made during the discussion seemed to show. His serious claim for a different subsidy basis cannot be lightly passed over, and "payment by results" should undoubtedly have been chosen, in accordance with the recommendations of Lord Weir's Committee. Under the present scheme there is little incentive to the operating company to make any effort at obtaining more economical machines. However, the agreement is made, and presumably we shall have to go on as we are going until the present period expires.

Major Mayo's suggestion that a substantial subsidy should be given for experimental aircraft seems to offer the only possible solution under present circumstances. Exactly how this could be worked in so as to enable practical experience to be obtained with such experimental types we do not profess to know, but that a solution will have to be found is obvious.

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Revival of the Semi-rigid

In this week's issue we refer briefly to a new type of semi-rigid airship which is being developed by British Airships, Limited, and which, it is hoped, will prove to mark an important advance both on the score of aerodynamic efficiency and that of low cost and maintenance. It is too early in the day yet to express an opinion as to whether the new type of ship will attain the aims of the designers, but that there is still a useful field for the relatively small semi-rigid we firmly believe. It has become the fashion of recent years to think of airships in terms of millions of cubic feet, but the much more modest semi-rigid could undoubtedly be used with advantage on relatively shorter routes. For instance, it is conceivable that a service with small airships might be operated by means of which travellers could spend the better part of each day in making business calls in the large European centres, and do their travelling from city to city at night. By way of illustration, the circuit Berlin-Copenhagen-Stockholm-Oslo and back could be covered in a few days. Or a central European circuit such as Leipzig, Breslau, Vienna, Munich and back to London might be arranged. The ability of the small airship to travel at night, and the low first cost contemplated by the company, which should enable fares to become very reasonable indeed, point to the practicability of such a scheme. At any rate, the results attained with the first ship, B.S.R.1, will be watched with very considerable interest.



A NEW PARNALL MACHINE : Several unusual features are found in the "Pike," a biplane produced both as a seaplane and as a landplane. The engine is a Napier "Lion." Note the strut bracing which avoids lift and anti-lift wires. The propeller is a Fairey-Reed.

BANQUET TO THE BRITISH SCHNEIDER TEAM

A BANQUET was held at the Savoy Hotel on October 11 to celebrate the British victory in the Schneider Trophy Race. It was given by the Royal Aero Club, Royal Aeronautical Society, Air League of the British Empire, and the Society of British Aircraft Constructors. The Chairman was Brig.-Gen. The Lord Thomson, Chairman of the Royal Aero Club. There was a distinguished gathering present, and it was representative of all branches of aviation, the Navy, and civilian affairs. Lord Thomson opened his speech by mentioning that a report in the Press had referred to Flight-Lieut. Webster as saying "let us celebrate." That was what they were doing now. The victory of the British team was the greatest triumph of British aviation for the last few years. It was a triumph of organisation, method, manufacture, skill, and grit. It was not necessary to remind us that we had won the Schneider Trophy on two previous occasions. Incidentally he had never understood why the Trophy was ever called a cup. Of our two previous victories the first took place in 1914, and it was won by Mr. Pixton. His speed in this race was 86 m.p.h. The second occasion when we were successful was in 1922, when Mr. Biard won the race. His speed was 145 m.p.h.

I wonder, said Lord Thomson, what Mr. Jacques Schneider thinks, in his retreat in the South of France, when he follows the fortunes of the Trophy. In the very first contest a speed of 40 m.p.h. was attained. He doubted if Mr. Schneider foresaw then the speeds that would be developed, the dimensions that this competition would come to. The race was an international affair now, entered for by Governments and attracting forceful personalities. It had become a national effort to win it. He thought that Mr. Schneider must rejoice, in his pleasant home, that the International contest had done this: aroused a widespread public interest in aviation. For this, thanks were due to him.

His principal task to-night, continued Lord Thomson, was to propose the toast of the winners of the Schneider Trophy and those other numerous representatives. Many contributed to our success at Venice and many factors, too. He would like to enumerate some of those factors without any attempt at an order of merit or precedence in the list. He would begin by referring to the important part played by the Air Ministry. Their work was invaluable and indispensable. Never before had a Government department played more nobly in a matter of this kind. To short-sighted people it might appear outside the official work of the Air Ministry. Then thanks were due to the constructors and designers and the Royal Aero Club. To Sir Samuel Hoare, Sir Hugh Trenchard, Sir John Higgins, not to mention the numerous able designers and technical experts at Farnborough the nation owed a great debt. Then came the immense help given by the Admiralty, who was represented at this banquet by the distinguished First Sea Lord, Admiral Sir Charles Madden. The help and presence of our fleet at Venice had a good psychological effect on our team. A very large measure of credit was also due to the members of the Racing Committee. The latter had the satisfaction of seeing the Trophy back at Clifford St. As for the constructors, he hoped that Napier's and Supermarine's and Fairey's would enjoy material benefit from the victory. Now he came to the team. It was one of the regrets of his life that he was unable to be present at the Lido on the important occasion. He felt that the human element makes a strong appeal in these contests. To our team he would say that we were all grateful, and proud of them. They had done all that was expected of them and more than that; and a very great deal was expected of the Royal Air Force.

We had with us at the moment, continued Lord Thomson, two representatives of two great countries, Italy and America. We knew from past experience what formidable rivals they both were in aeronautics. We had met them before and we hoped to meet them again. They had been beaten and they had beaten. We had enjoyed their lavish hospitality. He felt sure that in our name he could express our welcome to their airmen for the next competition. Now that the Trophy was in our hands our motto was: let them all come and may the best man win.

Sir Hugh Trenchard was the next speaker. He said that he was speaking for all ranks of the Royal Air Force. The Schneider Team was only typical of the young officers of the R.A.F. It was only possible for the R.A.F. to carry out their many duties of this sort if the organisation, administration, and training was perfected and the money was spent on them. It was not only not possible to carry out such flights without

organisation and training, but it was not fair to the young officer and man joining the R.A.F. On behalf of the R.A.F., he thanked the Admiralty and the Navy for the important part they had played. Now he would turn to the Team. What did they expect him to say? He would say that they of the Royal Air Force congratulated them on having done what was expected, namely, added credit to the R.A.F. To the designers he would express their appreciation of the progress that had been made in the machines in recent years.

Air Vice-Marshal F. R. Scarlett then rose and said that they, the Team, were fortunate in having been selected by the Air Ministry to represent them and the country. It had been a pleasure to work with the technical people. To the designers and constructors he would express his hope that their trade would prosper. He would say a word on behalf of the non-commissioned officers and mechanics of the R.A.F. who had worked so well side-by-side with the contractors' men. They were samples of what the Service can and does produce. He hoped a kindly eye would be turned to them when they sought employment in civil life.

Flight-Lieut. Webster then rose amidst prolonged cheers, and gave his speech in a clear voice. He thanked them for the way in which they had been received. He had been envied on his selection for the race, but if anyone envied him at that moment (making a speech) he would like to know them. He was pleased that the trust placed in them had been justified. He eulogised his leader, Squadron-Leader Slatter, who had a most difficult job to do. They, the pilots, had found a chit inside their cockpits just before the race which had conveyed to them just the appropriate message.

Col. The Master of Sempill spoke next, and stated that the Royal Aeronautical Society and Institution of Aeronautical Engineers which had become an amalgamated body had decided to award the silver medal to the technicians of Napier's, Supermarine's, and Fairey's. During his speech he asked the designers of the winning machine and engine to stand up, and Mr. R. J. Mitchell and Capt. G. S. Wilkinson obeyed this request and received a deserved ovation. Mr. Fairey was asked to convey appreciation to Mr. P. A. Ralli, the designer of the Fairey airscrew used in the race. These three designers will receive the medal.

Admiral Sir Charles Madden rose to convey a message from the Navy, the brother officers of which were as proud of the Schneider Team as their own R.A.F. officers were, and they sent them their congratulations; and to the designers as well.

Count Rogeri, of the Italian Embassy, spoke on behalf of our competitors, his own countrymen. He said that Italy sincerely joined in the congratulations to the British Team. They in Italy had been happy to have them amongst them, and they would welcome them back again as soon as possible!

Sir Samuel Hoare, the Air Minister, followed next. He spoke, he said, at the end of a very successful evening, to say the Amen, and hymn of praise. He had asked Webster, when he first saw him after the race, what were the principal difficulties he had experienced, and he had been told it was that of seeing the pylons when cornering the course. He would suggest then that at the next race let them place at the corners the well-known mustard-coloured suit of the excellent secretary of the Royal Aero Club, Mr. Perrin, then there would be no risk of any pilot getting off the course! He would draw to Lord Thomson's attention the fact that the beaten machines were painted red! He would leave this observation without further comment! They had been friends when Lord Thomson was a minister, and he (Sir Samuel Hoare) was not, and when he was a minister and Lord Thomson was not. Long might that harmony continue. Aviation should be kept clear apart from politics altogether.

In a brief reply to this, Lord Thomson also mentioned the necessity of aviation getting above party politics. He also said that he had heard from other sources that the beaten machines were painted red!

This concluded the banquet to the Schneider Team, which comprised Air Vice-Marshal F. R. Scarlett, Sqdn.-Leader L. H. Slatter, Flight-Lieut. S. N. Webster, Flight-Lieut. O. E. Worsley, Flight-Lieut. S. M. Kinkad, and Flying Officer H. M. Schofield.

The following is a list of many of those present:—Air Vice-Marshal Sir John Salmond, Air Vice-Marshal Sir John Higgins, Air Vice-Marshal Sir Sefton Brancker, Air Commodore F. C. Halahan, Air Vice-Marshal Sir Vyell Vyvan, General A. Guidoni, Sir Francis K. McClean, Sir Charles Wakefield, Sir

Samuel Instone, Commander J. Bird, Mr. H. T. Vane, Mr. C. R. Fairey, Mr. R. Blackburn, Mr. Handley Page, Mr. O. Short, Col. W. A. Bristow, Mr. Wallace Barr, Col. M. O. Darby, Major R. H. Mayo, Mr. G. Parnall, Sir Stanley White, Major H. G. Brackley, Major G. P. Bulman, Sir John Shelley-Rolls, Mr. T. P. O'Connor, Mr. H. P. Folland, Major F. A. Bumpus, Mr. Holt Thomas, Mr. Norris, Mr. C. C. Walker, Major H. Hemming, Mr. A. S. Butler, Mr. R. Atherton, Major J. S. Buchanan, Flight-Lieut. P. W. S. Bulman, Mr. F. Sigrist, Mr. Siddeley, Major S. V. S. Sippé, Lieut.-Commander R. D. Kirkpatrick, Sqdn. Leader H. de Haig, Capt. P. Acland, Major J. Stewart, and Major M. Wright.

Schneider Items

Flight-Lieut. Webster received his civic welcome from his native town of Walsall on October 7, the hero being escorted through the town in the evening by a torchlight procession.

Congratulations

MRS. ELIOTT-LYNN was married to Sir James Heath on October 11 at Christ Church, Down Street, Mayfair. Very few people were aware of her approaching marriage. Lady Heath is our most prominent woman pilot and a familiar figure at all air race meetings, where she usually has a good measure of success. At various times she has owned quite a fleet of machines, and possesses about two now. Her activities in the air are not limited, so that her experiences have included air tours of the Continent, flying in Africa, and records in the light 'plane class. Lady Heath, as she now is, was one of the first to learn to fly with the London Aeroplane Club.

R.A.F. Flying Boat's Eastern Cruise

THE four R.A.F. flying boats which are to make a cruise to the Far East leave Felixstowe on October 14 for Plymouth, whence they start for the East on October 17.

Lieut. Bentley's Mishap

THIS South African pilot, who has just made fame by reaching South Africa from England alone in his Moth in 28 days, had the misfortune to hit an ant-heap whilst

The Air Ministry have decided to exhibit the winning supermarine-Napier S5. The racing machines are now on their way to England from Venice.

There is keen competition amongst the seaside resorts to become the venue of next year's race. Amongst these are Bournemouth, Cowes, Felixstowe, Morecambe, Southport, and Weymouth.

The arrival of the British Team at Croydon on October 1 was broadcast by the B.B.C.—and came through remarkably well. The various happenings were described, together with one or two short "talks" on the Schneider Race, by Capt. L. de Giberne Sieveking, D.S.C., and Capt. Derek MacCulloch, M.C., who are both members of the B.B.C. with distinguished flying careers. The noise of the "Argosy's" and escorting aeroplanes' engines were clearly heard.

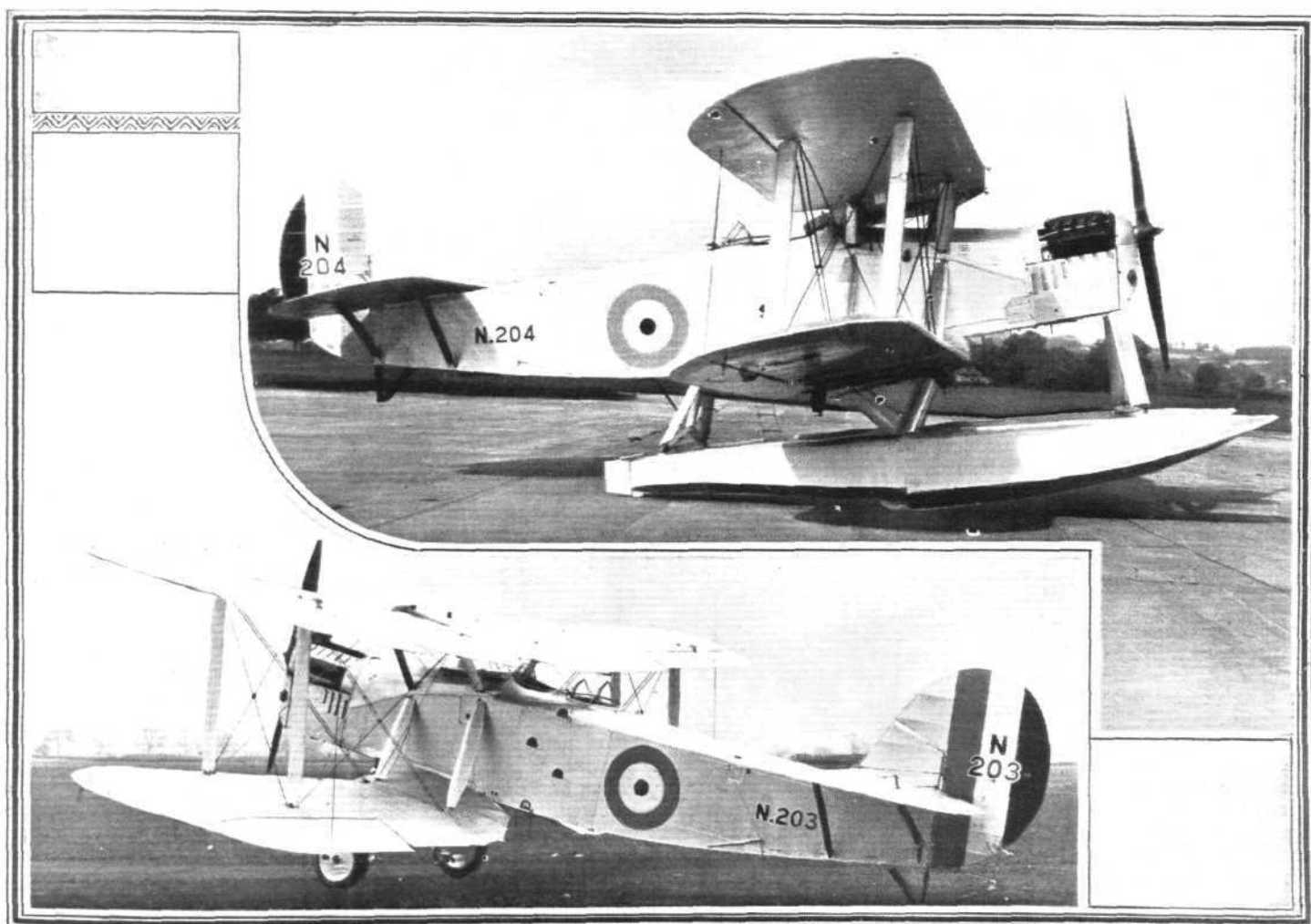
taking off at Mkonjane, in Zululand, and his machine was damaged, but he and his passenger, Major Miller, who made an interesting tour of the Union this year, also in a Moth, were not hurt. Although the chassis received a terrific impact, it withstood it well, and Lieut. Bentley continued the ascent and made a good landing. He was on a flight from Pretoria to Durban.

Birmingham Air Pageant

A NET profit of £4,470 was made at this Air Pageant, which was held last July. In view of this, the Committee decided that it would be desirable to hold another pageant next year.

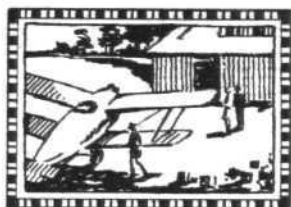
The Royal Air Force Memorial Fund

THE usual meeting of the Grants Sub-Committee of the Fund was held at Iddesleigh House, October 6. Lieut.-Commander H. E. Perrin was in the Chair, and the other members of the Committee present were:—Mrs. L. M. K. Pratt-Barlow, O.B.E., Mr. W. S. Field, Sqdn.-Leader Douglas Iron, O.B.E. The Committee considered in all 11 cases, and made grants to the amount of £481. The next meeting was fixed for October 20, at 2.30 p.m.



THE BLACKBURN "RIPON": Fitted with Napier "Lion" engine, this machine is produced both as a seaplane and as a landplane. Above views show the machine in both forms. Note the water rudders on the heels of the floats in the seaplane version.

PRIVATE



FLYING

A Section of **FLIGHT** in the Interests of the Private Owner, Owner-Pilot, and Club Member

BRISTOL AND WESSEX AEROPLANE CLUB OFFICIALLY OPENED

THE Bristol and Wessex Aeroplane Club was formally opened on October 8 by Sir Samuel Hoare before a large gathering, at the Filton Aerodrome. In his speech, the Air Minister revealed some welcome news for our light 'plane clubs which have been struggling for existence and hoping for Government assistance as their reward. First, he gave a brief survey of the light 'plane movement and stated that there were no fewer than 1,500 members in the clubs, 150 of whom were flying members who had already taken their "A" and "B" certificates. This was the satisfactory result of the experiment started over two years ago and not the least satisfactory part was the share taken by keen sportsmen and sportswomen. During the last few weeks the Air Ministry had been considering very carefully the future of the light aeroplane clubs and the way in which they

end of that time each club would be able to exist independent of the subsidy.

It was much better to be independent of the inevitable conditions accruing from Government assistance, said Sir Samuel Hoare.

The Favoured Clubs

The Air Minister then announced that Bristol was one of the selected clubs as representing the West of England. Norwich would be another, as the capital of the East of England; the third would be Nottingham, for the Midlands; and the fourth, the Scottish Flying Club, representing Scotland. It might be that when further consideration was given to the scheme one or two more clubs would be favoured. He expressed the wish that Bristol would not only deserve the



"FLIGHT" Photograph

BRISTOL CLUB'S OFFICIAL OPENING.—A crowd of interested spectators listening to the speeches.

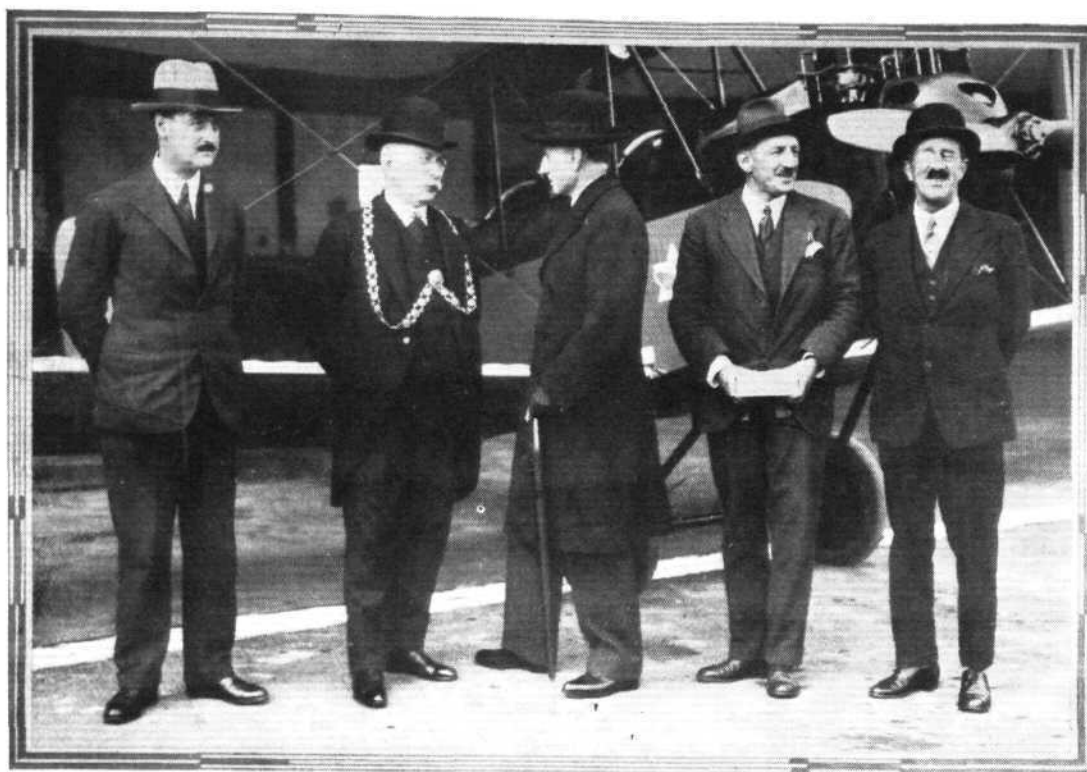
could be assisted in their initial organisation. Up to the present they had been able to subsidise six clubs from the public funds. He was glad to be able to tell them it was now possible to increase the number of clubs to be thus favoured, and amongst the first of these selected was the Bristol Club. Sir Samuel Hoare then gave a short summary of the conditions pertaining to the offer. The basis of the subsidy was to be payment by results, and, in accordance with that principle, they were prepared to pay £50 to the club for every pilot who obtained his "A" or "B" certificate. In addition, they would pay £1 10s. for every flying hour up to a maximum of 20 hours, flown by a pilot having either certificate. Further, there would be a grant of £10 in respect of each member holding either licence in force on the previous January 1. They were prepared to make these grants up to a maximum of £2,000 a year, which was the maximum sum any light aeroplane club could receive, and to continue them for three years, upon the general understanding that at the

subsidy but would prove one of the great civil flying centres.

Mr. A. H. Downes Shaw, chairman of the club, in moving a vote of thanks to the Air Minister, said it was a great occasion to have with them both the Air Minister and the Director of Civil Aviation, Sir Sefton Brancker. He mentioned that the club had 55 pupils under instruction, and three of them were ladies. Four pupils had been brought to the solo stage, and of these three had never flown an aeroplane before last July. They had also a member who owned a machine, and in a year's time he believed the number would be increased to three or four owners.

The Flying

The opening ceremony was naturally attended by much interesting flying. Fog had prevailed in the morning and fears were held that the visiting machines might not be able to get through. But there was a good attendance, amongst those arriving by air being Sir Sefton Brancker, on a "Blue-

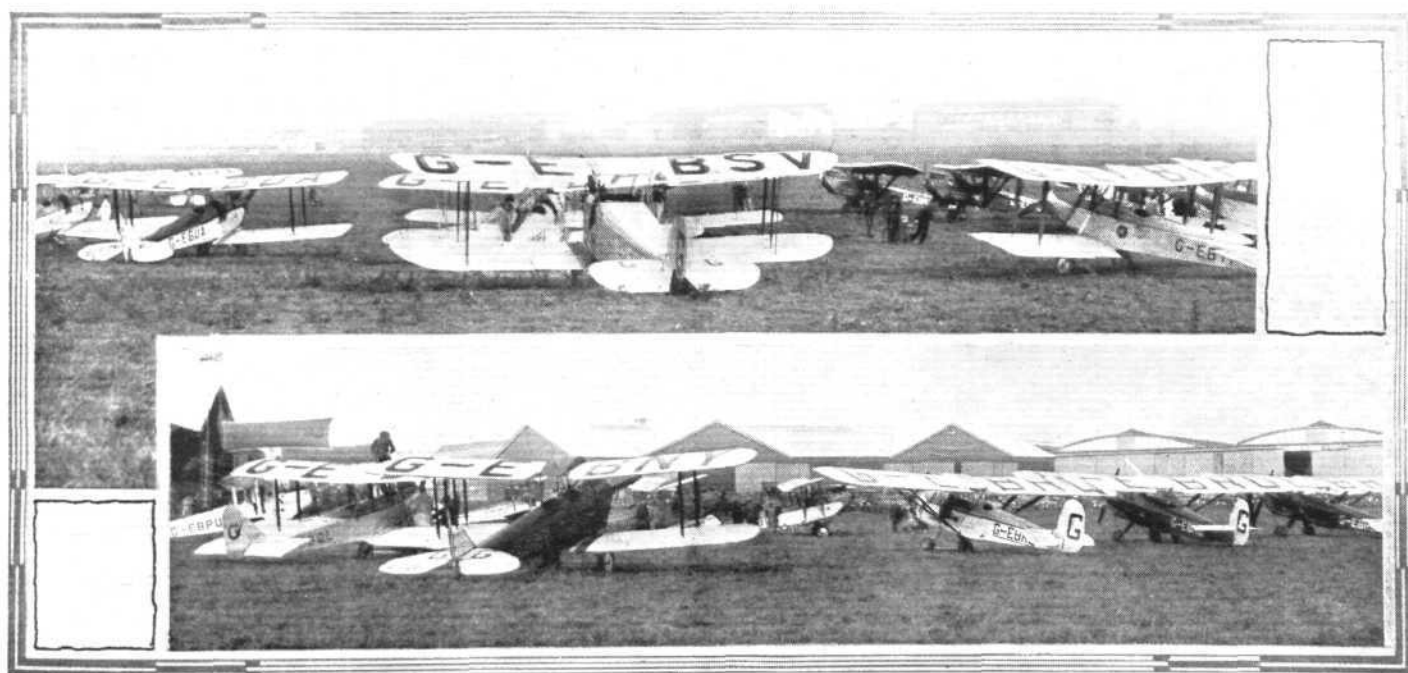


Bristol Club's Inauguration by the Air Minister: This distinguished group comprises (left to right): Mr. Downes Shaw, Chairman of the Club; The Lord Mayor; Sir Samuel Hoare; Col. G. Flemming; and Sir Sefton Brancker.

["FLIGHT" Photograph]

bird," piloted by Captain Stockbridge; the Hon. Lady Bailey and Mrs. Carbery, on Moths; Miss O'Brien, Mr. A. S. Butler, Mr. S. L. F. St. Barbe, Captain Broad, and Mr. F. D. Mill—all on Moths, too. The Master of Sempill came on a D.H.51; Mr. Hollindrake and Mr. Goodfellow on Avians. A flight of four Westland "Widgeons" arrived, piloted by Captain L. G. Paget, the new test pilot to the Westland Company; Captain Hill; Mr. H. Brooklyn; and Mr. Tapp. Captain Boyle flew Mrs. Elliott-Lynn's S.E. 5a down. Mr. Fielden, of the Yorkshire Club, was unable to get through on account of the fog. Mrs. Carbery flew from London in her own Moth, Captain Broad accompanying her in another. When near Chipping Sodbury, Mrs. Carbery made a forced landing owing to fog, and Captain Broad then came down too and took her on as a passenger in his machine. It had been Captain Broad's intention to bring his famous Tiger-Moth along, but the weather conditions cancelled this proposal. Miss Spooner was a visitor, the lady pilot who recently flew alone in a Moth to the Schneider meeting at

the Lido; and so was Captain McIntosh, the Imperial Airways pilot, who is now making preparation for a long-distance flight to the Far East. The Bristol Club's instructor, Mr. W. E. Bartlett, gave a wonderful exhibition of crazy flying on a Moth, giving the spectators a genuine thrill by performing close above their heads. Captain Broad also stunted. There was one competition—a bombing demonstration, which, according to the programme, was open to pilots with lady passengers. First, the competitors stood by their machines, then the lady obtained the bomb; the machines took off, flew a short course, and then dropped the bomb (a bag of flour) on a target in the aerodrome. Marks were awarded for accuracy and speed. Machines had to pass straight over the target and not circle. There were 20 marks for O.K. and 2 marks were to be forfeited for every 5 ft. Time limit was 10 mins., one mark being awarded for every 10 secs. under this time. This event was won by Mr. A. S. Butler, whose passenger was Mrs. Hutchings. Mr. Goodfellow and his passenger were second. Another competitor, Miss



"FLIGHT" Photographs

BRISTOL CLUB'S AIR DAY: These are two general views of the machines which took part at the meeting at Filton, giving an idea of how representative the machines were of the light aeroplane class.



[“ FLIGHT ” Photograph]

BRISTOL'S AIR MEETING : Capt. F. Barnwell, the famous Bristol designer, giving an exhibition on the Bristol “ Brownie.”

O'Brien, made a forced landing in a neighbouring field. There was also another forced landing made but no damage was done in either case.

A popular feature of the afternoon's sport was the joy-riding which was carried out in Moths, Avians, and Bluebirds. About 90 people were taken up, many of whom had not flown before. The Bristol Club's “ Brownie ” was flown by Captain Barnwell, and Mrs. Elliott-Lynn's S.E.5A was also in the air.

Brief History

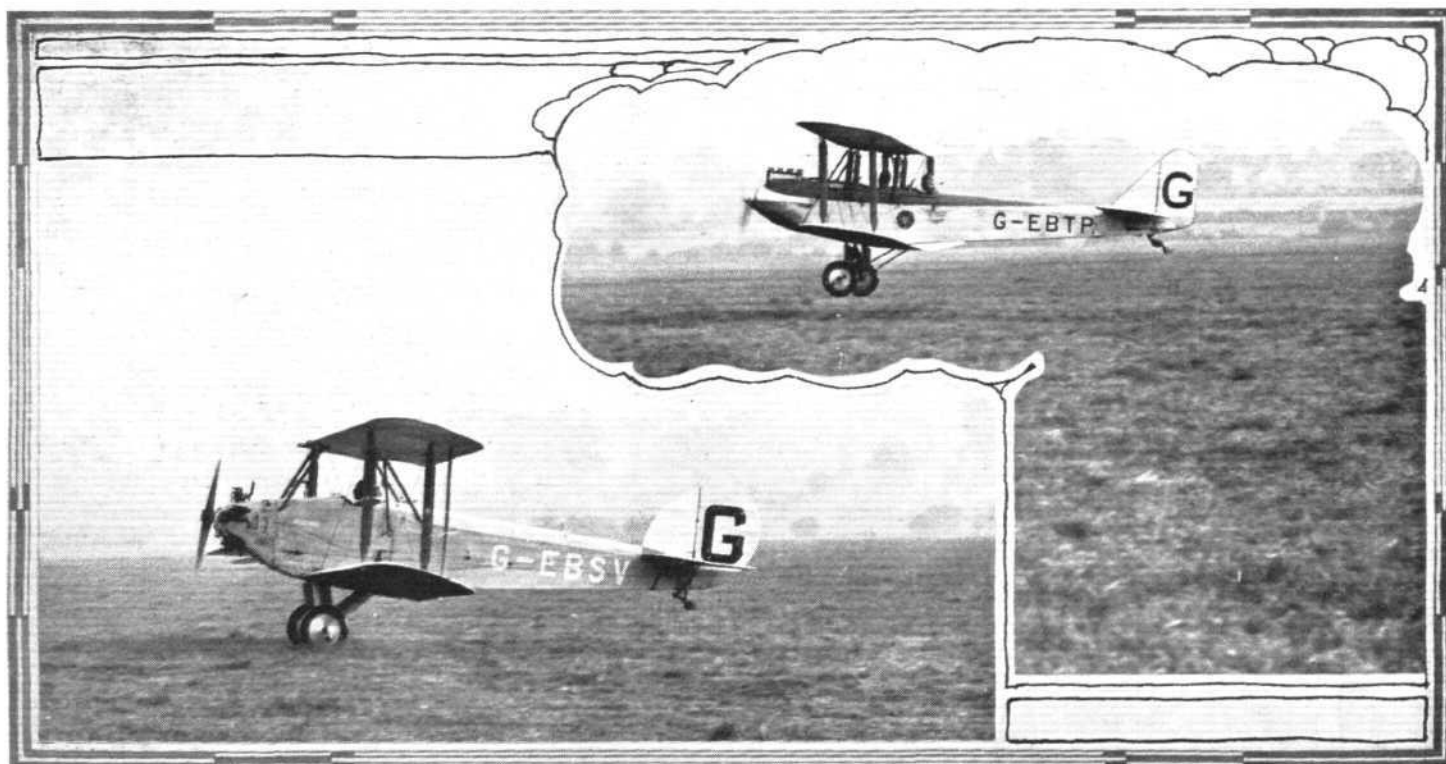
It was in January this year that the Bristol Club started to materialise. A public meeting was held in the Victoria Rooms,



[“ FLIGHT ” Photograph]

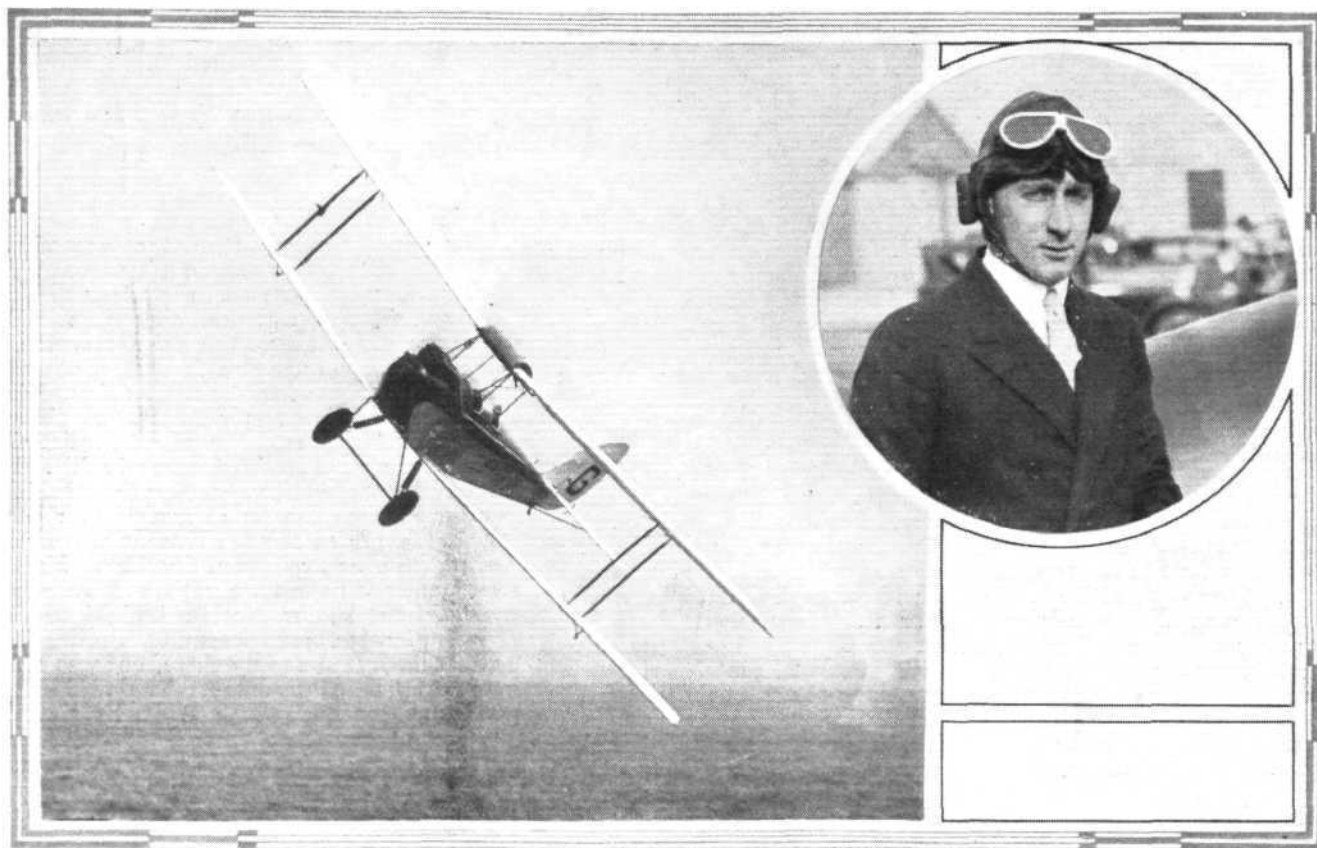
A BRISTOL EVENT : Mr. C. F. Unwins flying “ QT ” during the meeting.

and Captain Broad flew down in a Moth, which was put on view in the town. Following this, a pageant was held in June last which brought further public interest in the proposed club. Sir Stanley White and Mr. George Parnall generously presented two machines, and in addition to this, a sum of £1,150 was raised, upon which it was decided to start. Mr. Bartlett was engaged as instructor, and instruction flying commenced on July 29. Since then, the Club has done 145 hrs. flying. As with most of the clubs, there is such a demand on their resources now that a second instruction machine is necessary. Then, when the R.A.F. take over their new quarters at Filton, the Club will doubtless have to purchase its own aerodrome.



[“ FLIGHT ” Photograph]

BRISTOL CLUB'S MEETING : On the left is seen the Blackburn “ Bluebird ” in which Sir Sefton Brancker flew down from London, piloted by Capt. Stockbridge. On the right is Mr. Hollindrake taking up a passenger in an Avro “ Avian.”

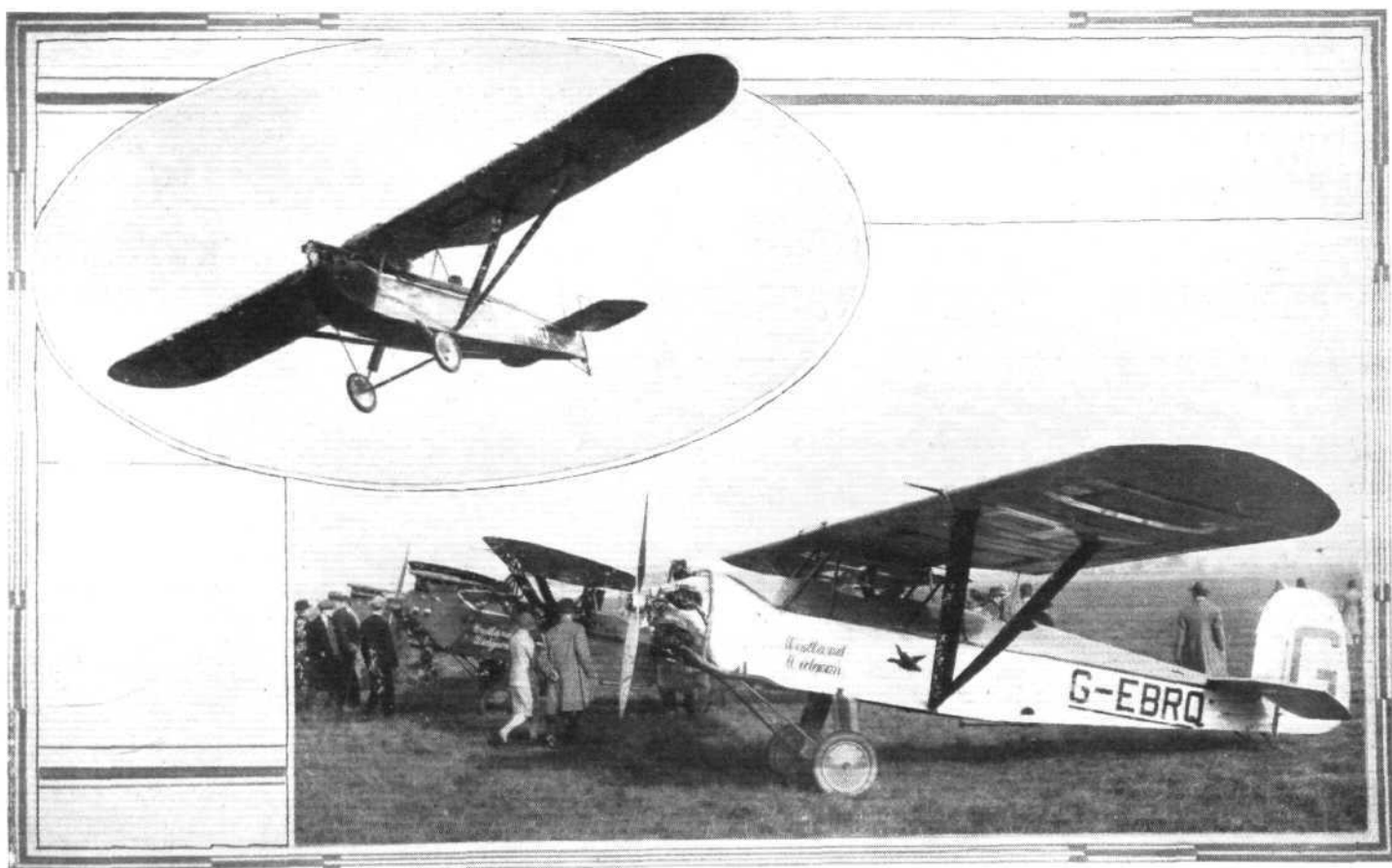


"FLIGHT" Photographs

BRISTOL CLUB OPENS : Here is Mr. W. E. Bartlett, the pilot instructor to the Club, and a close view of his crazy flying in the Club's Moth, which delighted the crowd.

This means that to carry on the valuable work, a large capital outlay is essential. In a foreword to the programme issued for last Saturday's meeting, the possibility of Bristol

being a future air port is discussed, with particular reference to the possible increase of air traffic to Ireland. Near Bristol there are excellent sites for aerodromes and seaplane bases.



["FLIGHT" Photographs

THE BRISTOL MEETING : The top picture shows Capt. Paget, the new test pilot to the Westland Company, performing on a Westland "Widgeon," and below are three of the four "Widgeons" which arrived in formation.

The patrons of the Club are the Duke of Beaufort and the Lord Mayor of Bristol. The President is Col. H. C. Woodcock, M.P. The Vice-Presidents are Sir Stanley White, Bt., Sir Beddoe Rees, Mr. H. J. Thomas, Sir T. W. H. Inskip, Major Egbert Cadbury, and Mr. George Parnall. The Hon. Secretary is Col. Flemming. The two local aircraft firms have helped the Club considerably. The Bristol Aeroplane

Company presented them with £500 as well as the "Brownie," and Mr. G. Parnall gave £120 as well as the "Pixie." Donations of £100 each have been received from Major Cadbury, Mr. F. G. Robinson, Sir Charles Wakefield, Sir Gilbert Wills, and Col. Woodcock. Challenge Cups have been presented by Mr. E. H. Desprez and Selfridge & Co., and a Challenge Bowl by Mr. Talbot O'Farrell.

LIGHT 'PLANE ALTITUDE RECORD

On an Alpha-Avian Mrs. Elliott-Lynn, three days before her marriage to Sir James Heath, reached an altitude of 19,200 ft. on October 8. This figure is subject to official confirmation yet, but it almost certainly represents a new record for light aeroplanes of the two-seater class. It is a triumph for A. V. Roe & Co. in particular, for both the engine and machine are their own design and construction. The Alpha engine is of 90 h.p. This one in question was the second of the series, and entirely made by hand. Mrs. Elliott-Lynn states that it has not developed any teething troubles. During the flight it was run at full throttle for two hours, and gave the same revolutions at the end of that time as at the beginning. Air locks occurred twice—once at 11,000 ft. and then at 18,000 ft.—but these were easily cleared by the throttle. This engine is excellent for its smooth running too. The B.P. petrol consumption for the three hours' flight was just under 13 gallons, which was considered very economical. The consumption of Castrol oil was 2½ pints.

The Alpha starts very easily. The machine stood for five hours after the flight was accomplished and after a suck in once the Alpha started at the first touch of the starting magneto. This characteristic is an asset for the private owner. During the whole climb the oil temperature did not quite reach 80 deg. This attempt was to have been made a

day previously and Mrs. Williams, the wife of a member of the Lancashire Aeroplane Club, had waited all day for the purpose. The weather conditions were against the flight, however, and when the take-off was eventually made the next day this lady had not arrived at the aerodrome, so Mr. Barrett was the passenger in her place.

Mrs. Elliott-Lynn and this friend ascended from Woodford Aerodrome, Cheshire, in a perfectly clear atmosphere. She had naturally worn additional flying gear to resist the cold air, but, in spite of this the cold was severely felt, although it did not cause any difficulty in controlling the machine. On emerging from the clouds she found herself over the coast at Southport, and owing to the fog the descent was eventually made in a small field near Frodsham, Cheshire. Here it was necessary to remain until the barograph had been collected by the observing officials, for continued flight would have affected the reading. Mr. John Leeming, President of the Lancashire Aero Club, set out to fly there, but was compelled to turn back and then go by road. The field was only 80 yards long, and was lined with 8 ft. hedges, but the Alpha-Avian had no trouble in taking off later in the evening. The previous record in this class was held by Lady Bailey, who reached 17,283 ft. in a Moth on July 5 from Stag Lane. She was accompanied by Mrs. G. de Havilland.

LIGHT 'PLANE CLUBS

London Aeroplane Club, Stag Lane, Edgware. Sec., H. E. Perrin, 3, Clifford Street, London, W.1.
Bristol and Wessex Aeroplane Club, Yate, Gloucester. Secretary, Lieut.-Col. C. Fleming, Filton Aerodrome, Patchway.
Hampshire Aeroplane Club, Hamble Southampton. Sec., Maj. Ross White, Hamble, Southampton.
Lancashire Aero Club, Woodford, Lancs. Sec., C. J. Wood, Oakfield, Dukinfield, near Manchester.
Midland Aero Club, Castle Bromwich, Birmingham. Sec., Maj. Gilbert Dennison, 22, Villa Road, Handsworth, Birmingham.

Newcastle-upon-Tyne Aero Club, Cramlington, Northumberland. Sec., A. H. Bell, c/o The Club.
Norfolk and Norwich Aero Club, Mousehold, Norwich. Sec., H. O. Bennett, 5, Opie Street, Norwich.
The Scottish Aero Club Movement, 101, St. Vincent Street, Glasgow. Sec., Harry W. Smith.
Suffolk Aeroplane Club, Ipswich.—Secretary, Courtney N. Prentice, "Hazeldeil," Stowmarket, Suffolk.
Yorkshire Aeroplane Club, Sherburn-in-Elmet, Yorks. Sec., D. M. N. Coles, The Aerodrome, Sherburn-in-Elmet.

LONDON AEROPLANE CLUB

REPORT for the week ending October 9. Flying Time: 34 hrs. 35 mins. Dual: 18 hrs. 20 mins. Solo: 12 hrs. 40 mins. Passenger Flights: 3 hrs. 35 mins.

Dual Instruction (with Capt. F. G. M. Sparks): L. Daniels, H. R. Presland, R. Taylor, Capt. Burt, C. N. Brand, A. J. Richardson, H. Solomon, P. W. Hoare, R. Andrews, Miss Wilson, J. H. Vaizey, F. A. I. Muntz, G. W. Hall, G. H. Weston, J. Bickley, J. A. Brewster, G. Black, G. E. Clair, H. Michelmore, G. Black, H. J. Greenland, E. A. Lingard, L. Rowson.

With Capt. S. L. F. St. Barbe: F. Yeats-Brown, Miss Wilson, E. C. Edwards, M. Parkin, H. J. Greenland, M. P. Susman.

Solo Flying: R. Sanders Clark, O. J. Tapper, J. J. Hofer, R. Taylor, G. C. Bonner, A. F. Wallace, B. B. Tucker, P. W. Hoare, J. H. Vaizey, C. H. Swan, G. W. Hall, W. Roche-Kelly, Sqdr.-Ldr. Wright, K. V. Wright, Maj. Beaumont.

Passenger Flights (with Capt. F. G. M. Sparks): J. M. Roberts. With W. Hay: A. Fowler, R. Hayes. With A. G. D. Alderson: H. J. Kemp. With R. Malcolm: C. D. Elliott, Maj. Beaumont, A. Fowler.

Bristol Flying Meet.—At the opening ceremony of the Bristol and Wessex Aero Club at Filton, Bristol, on Saturday last, by the Secretary of State for Air, Sir Samuel Hoare, Bart, the London Aeroplane Club was represented by Maj. K. M. Beaumont, D.S.O., and Capt. S. L. F. St. Barbe, who flew down in a D.H. "Moth."

Fatal Accident.—It is with deep regret we have to announce a fatal accident to Mr. Charles Harold Swan on Sunday last. Mr. Swan was carrying out the altitude test for his aviator's certificate and was making the descent with engine cut off. At the moment no further details are available.

September Flying Time.—The total flying time for the month of September was 159 hrs. 20 mins.—Dual Instruction: 73 hrs. 55 mins. Solo: 43 hrs. 55 mins. Passenger Flights: 17 hrs. 45 mins. Race Meetings: 11 hrs. 5 mins. Test Flights: 12 hrs. 40 mins.

BRISTOL & WESSEX AEROPLANE CLUB

REPORT for week ending October 8.—Flying time, 15 hrs. 20 mins. Instruction, 9 hrs. 40 mins.; soloists, 3 hrs. 30 mins.; passengers, 2 hrs. 10 mins.

Instruction (with Mr. Bartlett): Messrs. Welch, Tiarks, Bathurst, T. H. Clarke, E. Hopper, A. E. Stephens, Roberts, Downes-Shaw, and Miss Miles.

Soloists under Instruction: Messrs. Bathurst, Downes-Shaw, and Tratman.

Pilots: Messrs. E. Hopper and Capt. Barnwell, Mr. Campbell and Mr. Shaw.

The Hon. H. C. H. Bathurst carried out his first solo flight on Thursday, and acquitted himself with great credit.

All members of the club are very grateful to the Right Hon. Sir Samuel Hoare, Bart., G.B.E., C.M.G., M.P., Secretary of State for Air, for coming down and officially opening our club. The announcement he made that the club was to be granted the Government subsidy was received with cheers.

It must be confessed that the fog caused anxiety in the morning, and it seemed doubtful if the pilots who had accepted our invitation would be able to fly down. A telephone message was received that Air Vice-Marshal Sir Sefton Branker, piloted by Capt. Stockbridge on a Blackburn "Bluebird," was on his way, and shortly after 12 o'clock the noise of the engine of the first visiting aeroplane was heard, and one after another the machines appeared through the mist and landed on our aerodrome, Sir Sefton Branker being one of the first to arrive.

Already quite a number of new members have sent in application forms, and we only hope that the weather will enable us to continue our flying instructions with all speed.

HAMPSHIRE AEROPLANE CLUB

REPORT for week ending October 2:—Flying time: 15 hrs. 50 mins. Instruction, 10 hrs. 10 mins.; soloists, 4 hrs. 35 mins.; passengers, 35 mins. test flights, 30 mins.

Instruction (with Flight-Lieut. Thomson): Mrs. Aitken-Dick, Lieut.-Commander Woodhouse, R.N., Lieut. Kidston, R.N., Lieut. Lambe, R.N., Lieut. Richardson, R.N., Capt. Molyneux, M.C., Messrs. Evans, Endacott, Stanford, Molony, Williamson, Hall, Kerry, Hancock, Collins, Grahame Gibbs, Courtney, Whittle, Brewster and Shepherd.

Soloists: Don J. de la Cierva, F. O. Southey, Lieut. Graham, R.N., Messrs. R. Sanders Clark, Wyllie, Wells, Molony, and Bowen.

Passengers (with Flight-Lieut. Thomson): Mrs. Grahame Gibbs, Mr. Hillaire Brady, and Mr. Massey. With K. P. L. Bowen: Mr. Swinburn.

Three days this week were impossible for flying. To quote the *Daily Mail*, "Gales and rain storms of great intensity swept the country, causing loss of life and extensive damage to property."

Many members have contributed to the fund for the purchase of another aeroplane, and already over one hundred pounds has been guaranteed. As the directors have promised to double the amount subscribed by the members, it should be possible to purchase another machine before long.

REPORT for week ending October 9.—Total flying time, 32 hrs. 25 mins. Instruction, 11 hrs. 45 mins.; soloists, 11 hrs. 45 mins.; passengers, 7 hrs. 40 mins.; test flights, 1 hr. 15 mins.

Instruction (with Flight-Lieut. Thomson): Miss Home, Mrs. Andrea, Mrs. Aitken Dick, Mrs. Ranald, Maj. Andrea, Lieut.-Comdr. Woodhouse, Capt. Molyneux, Lieut. Hall Thomson, R.N., Lieut. Lambe, R.N., Lieut. Mandeville, R.N., Messrs. Cripps, Fawkes, Puttock, Nuthall, Hall, Whittle, Williamson, Baynes, Boileau, Hancock, Evans-Penman Stanford, and Lieut. Graham, R.N.

Soloists (licensed): Lieut. Oliver, R.N., Capt. Yeatman, F/O. Southey, Don J. de la Cierva, Messrs. Wyllie, Bowen, Murray, Wells, Fagan, and Mrs. Ranald.

Soloists (training): Miss Home, Lieut. Graham, R.N., Lieut. Lambe, R.N. Capt. Molyneux, M.C., Hon. H. R. Grosvenor, and Messrs. Cripps, Parker, and Stanford.

Passengers (with Flight-Lieut. Thomson): Lady Jane Hardy, Miss D. Fullerton, Capt. Kirby, Miss Cripps, Messrs. Swinburn, Perry, Massey, and



FLIGHT TO AUSTRALIA: An Avro "Avian" light aeroplane will leave Croydon within the next few days on a flight to Australia. The pilot is Capt. W. N. Lancaster, R.A.F. (Res.), and the passenger is Mrs. Keith Miller, wife of a well-known Australian journalist. The machine is fitted with a 32.80 h.p. Cirrus engine, and is a standard machine except for having larger tanks fitted. The route will be via Paris, Lyons, Marseilles, Rome, Naples, Malta, Khoms and Benghazi in African Italy, Sollum in Egypt, thence via Irak, Persia, Calcutta, Singapore, the Dutch East Indies, to Port Darwin, Australia, and it is planned that the flight will take from five to six weeks. The "Avian" will carry a letter from the High Commissioner in London to the Prime Minister of the Commonwealth of Australia. It has been christened the "Red Rose," as Capt. Lancaster is a Lancastrian.

Macgill. With K. P. L. Bowen: Miss Day, Mrs. Crook, Mrs. Bridges, Mr. Massey, Mr. Bridges, and Mr. Menzies. With Mr. Murray: Miss Clouston, Mrs. Clouston, and Mrs. Pasteur. With E. I. C. Wyllie: Mr. Phipps. With "Don J": Mr. Alexander. With Lieut. Oliver, R.N.: Mr. Miles. With Mr. Fagen: Mrs. Stokes.

This has been a record week for this club inasmuch as four pupils were successfully launched solo. Also our first lady member to go solo was sent off on Tuesday. She was Miss M. M. Home, one of our very first members and doubtless she would have flown solo much earlier had it not been for the fact that when she was well advanced in her instruction she went abroad for some months and only recently returned.

The other first soloists were Lieut. C. E. Lambe, R.N., Capt. H. T. Molyneux, M.C., and Mr. D. A. R. Cripps.

Lieut. Lambe had received only 3 hrs. 20 mins. instruction, and is stated by our instructor to be a most amazing pupil, and a born pilot. His dual consisted of eight lessons of from 20 to 30 mins. each, and he flew his first solo exactly four weeks after his first lesson. Unfortunately for this club, he has now been posted to duty at Malta.

On Saturday, Mrs. Ranald, who gained her "A" licence at the Henderson School of Flying, made an excellent solo on a "Moth" for the first time with this type of aircraft.

On Tuesday of this week Don J. de la Cierva "kindly" invited some of the club members to have a ride in his Auto-gyro. Having hurried away to read Capt. Savers' recent article on this invention, and then deciding to risk it, D. A. R. Cripps and R. H. Bound each took a turn in the passenger's cockpit. To the best of one's information, several other members subsequently availed themselves of the offer, but their names are not available to the writer.

Personally, one was delighted with the feel of this aircraft in the air, with the exception of coming in to land, when it was rather harrowing to find oneself still 100 ft. above the ground with the A.S.L. recording something between 20 and 25 m.p.h. Incidentally, one would like to suggest to Don J. de la Cierva that he provide a ration of that famous beef extract in the front cockpit to prevent that sinking feeling at this moment. But seriously, it would be interesting to know what the actual angle of descent is under these conditions. Cierva had a great day on Wednesday, when he had the novel experience to giving his own instructor dual. Flight-Lieut. Thomson had one lesson on the Auto-gyro, and then flew it solo. He views this machine with considerable misgiving, as he fears that when it ultimately comes into its own all flying instructors will lose their jobs as no instruction will be necessary. These are his own words, so evidently the Auto-gyro is very easy to handle.

One seems to have been writing a great deal about these windmills, and it is doubtful if it constitutes club news.

One other item of news before we close down. A dance was held in the clubhouse on Saturday evening, and the organiser, Mr. R. V. Perfect, is to be congratulated on the sitting out room. It was voted a great success. Personally, one spent most of the intervals rushing out on to the "lawn" to see how many more of the Japanese lanterns decorating the shrubbery had gone up in flames.

MIDLAND AERO CLUB LIMITED

REPORT for week ending September 24:—Total flying time, 12 hrs. 18 mins. Dual instruction (with Mr. McDonough): R. L. Brinton, D. Patten-Bethune, H. J. Lattey, E. P. Lane, R. D. Bednell.

Solo: C. W. Fellowes, S. H. Smith, R. D. Bednell, R. L. Jackson, R. Cazalet, E. R. King.

Passenger flights (with Mr. Willis): A. Hamilton; (with Mr. Brighton) L. V. Mann, D. Yates, E. D. Wynn, R. Darlington, E. M. Kerr.

The Midland Aero Club was represented by one D.H. Moth at the Hooton Park Meeting on September 24. Mr. McDonough took second place in the Hooton Park Handicap and Stakes.

Report for week ending October 1:—Total flying time, 12 hrs. 13 mins. Dual instruction (with Mr. McDonough): R. L. Brinton, E. P. Lane, H. Lattey, Capt. J. E. Brewin, R. Darlington, G. Robson, H. J. Willis.

Solo: R. L. Jackson, R. D. Bednell, R. Cazalet, S. H. Smith, E. J. Brighton.

Passengers (with Mr. Brighton): D. B. Browne, E. Skuce, S. L. Buckle, G. R. Paxman, L. V. Mann, A. E. Ackling.

On Sunday Mr. McDonough flew back from the Liverpool meeting.

The first member of the Club to become an owner-pilot is Mr. R. Cazalet who recently acquired a Westland Widgeon III (Cirrus, Mark II), which is housed in the club hangar.

REPORT for week ending October 8:—Total flying time, 13 hrs. 50 mins.

Dual instruction (with Mr. McDonough): G. Robson, R. Darlington, O. L. Richards, S. Duckitt, H. Lattey, Capt. J. E. Brewin, R. L. Brinton, N. Crane.

Solo: R. D. Bednell, E. R. King, C. Fellowes, S. H. Smith, R. Cazalet, E. J. Brighton, W. Swann, R. L. Jackson.

Passenger (with Mr. Brighton): H. G. Tower, E. G. Hall.

NORFOLK & NORWICH AERO CLUB

REPORT for week ending October 9:—Flying time, 14 hrs. 30 mins.

Instruction:—Mr. H. Neave, G. Surtees, A. Cooper, H. Varden-Smith, H. Mack, N. Lindley.

Soloists:—R. Harmer, W. Cubitt, R. W. F. Moore, W. A. Ramsey.

Passengers:—Miss Cooper, Mr. Sutton, H. O. Bennett.

LANCASHIRE AERO CLUB

REPORT for week ending October 3:—Flying time, 19 hrs. 30 mins. Instruction, 3 hrs. 10 mins.; solo flights, 5 hrs. 45 mins.; passenger flights, 1 hr. 10 mins.; flying pageant, 9 hrs. 25 mins.

Instruction (with Mr. Brown): Messrs. Sykes, Allott, Fisher, Anderson, Caldecott, and Davidson. With Mr. Cantrill: Messrs. Fisher, Ward, Caldecott, and Allott.

Pilots: Messrs. Gattrell, Leeming, Lacayo, Twemlow, Williams, Costa, Goodfellow, Scholes.

Passengers: with Messrs. Scholes, Costa, Gattrell, Twemlow, Williams, Chapman, Lacayo, Leeming and Cantrill; Mrs. Walker, Miss Emery, Messrs. Butt, Almeida, Holland, Ward, Browning, F. Scholes, Scholfield, Parker, Rowley, Bartram, Miss Davies.

Scholes and Dobson tried hard to get over to Yorkshire on Saturday. Scholes was away soon after 8 a.m., but as Dobson did not leave the deck he landed again to ascertain the trouble. This was that Dobson, who was flying Mrs. Elliott-Lynn's streamlined Avian, proved considerably greater in circumference than the lady in question and had been unable to squeeze himself through the opening in the fairing cover of the cockpit. Shoe-horns were obtained, but all to no purpose, and finally the aperture had to be increased. This caused delay, during which the weather over the Pennines grew steadily worse. Both pilots made an attempt to get through over, under, or round it, but had to abandon the attempt and return to Woodford in disgust.

A strong feeling is growing up that the Pennines, which form an irritating barrier to aeronautical communications between the two great counties of England, should be removed. Alternatively a Pennine Tunnel might be constructed.

REPORT for week ending October 8:—Flying time, 11 hrs. 30 mins. Instruction, 3 hrs. 35 mins.; solo flights, 3 hrs. 45 mins.; passenger, 3 hrs. 30 mins.; test, 40 mins.

Instruction.—With Mr. Brown: Messrs. Browning, Allott, Hall, Fallon, Twemlow, Anderson, Meads, Sykes, Benson, Heath, Dr. Wilson.

Soloists (under instruction).—Messrs. Meads, Rowley, and Caldecott.

Pilots.—Messrs. Twemlow, Michelson, and Ward.

Passengers.—With Mr. Brown: Messrs. Percival, Messum, and Moran. With Mr. Scholes: Miss Barlow, F. Scholes, and Barlow. With Mr. Twemlow: Mrs. Twemlow, Messrs. Gerrard, Allott, and Moran. With Mr. Costa: Mr. Leeming.

The weather has been mostly fair, but with a lot of ground mist and fog. RR met with a minor mishap on Tuesday which, as ill-luck would have it, damaged a main spar and put her out of commission. On Sunday, with many people waiting for flights, the Renault-Avro met with the first accident of her career by reason of a bad pancake. Fortunately, the undercarriage alone was damaged, and she will not be long out of action.

We had no club machine available to send to the Bristol and Wessex Club's meeting, but Mr. Hollingdrake went over on his own Avian, and Mr. Goodfellow hired, borrowed, or stole another Avian from Avros', on which he started in pursuit. They met fog within the first forty miles; Hollingdrake tried to go over it and Goodfellow under it, and both frequently wished they hadn't. Later in the day a wire was received: "Arrived safely. Very thick day. Anticipating very thick night." Goodfellow returned on Sunday, very bloodshot about the eyes, which he attributed to having no wind-screen. He thinks that the Bristol club ought to close down at once—so as to have a reopening meeting.

AIRISMS

FROM THE FOUR WINDS.

Amsterdam-Batavia in Ten Days

LIEUT. KOPPEN, the Dutch pilot who left Amsterdam for Batavia on October 1, piloting a Fokker monoplane fitted with Armstrong Siddeley "Lynx" engines, has put up a very noteworthy performance. He was carrying mails and has succeeded in completing the 9,000-mile journey in 10 days, thus beating Van der Hoop's 22 days for the same journey in 1924 and Van Lear Black's 13 days this year. Briefly, Lieut. Koppen's progress has been as follows: He reached Bushire on October 3, Karachi on October 4, Allahabad (930 miles in 8 hours) on October 5, delayed by lubrication trouble on October 6, Calcutta on October 7, Bangkok on October 8, Singapore on October 9, arrived Batavia on October 10.

German Far East Flight

HERR KÖNNECKE, who with Count Solms and Herr Herrmann are engaged in a flight to the East in a Caspar biplane, reached Bander Abbas, on the Persian Gulf, on October 8. The machine, it will be remembered, was damaged at Baghdad, but repairs were satisfactorily carried out.

Kisumu-Khartoum Service Starts Again

THIS air line in British East Africa, which was interrupted earlier in the year, has now resumed. The D.H. seaplane "Pelican," now recovered from its disintegration received in the early stage of the venture, made its first new trip this last week-end, carrying as passengers Viscount Gage, Parliamentary Secretary to the Secretary of State for India, and M. Allard, aeronautical adviser to the Belgian Government.

German Atlantic Flight Progress

THIS unexpected attempt of the Germans to cross the Atlantic by easy stages in a Junkers three-engined Monoplane D.1230, was marred by a forced landing in the sea off Santa Cruz, near Cape Rocca, on October 5. The machine was on the way to Lisbon from Amsterdam. Distress signals were sent out and the Portuguese Government ordered vessels to search the sea. The tug "Falcao" eventually took it in tow at 10 a.m., and it reached Lisbon by 4 p.m. It seems now that Junkers are interested in this flight as well as a shipping company and the "Severa" A.G. which, as an experimental institution is concerned with the technical aspect and provided much of the scientific equipment. Incidentally the monoplane is competing for the prize of 100,000 marks offered

in Germany for the first flight across the Atlantic by Germans. The woman passenger on board, Frau Lilly Dillenz, is an Austrian actress, whose participation is said to be backed by Austrian patriots who desired their impoverished country, which could not undertake such a venture alone, to be represented. It is not certain, however, that the actress will make the actual sea crossing. The start for the Azores is now dependent upon suitable weather.

French Air Subsidy for Ten Years

THE Government of France is to ask its Parliament to sanction an expenditure of £1,130,000 a year on civil aviation for a period of ten years. This does not mean an increase on the present sums spent, but merely ensures the subsidies for that period in advance.

Italian M.P. Killed

SIGNOR ROBERTO FORNI, an Italian Deputy, was killed on October 7, at Cameri Aerodrome, when his machine side-slipped from a low altitude during a trial flight. He was a prominent Fascist, and had recently become a pilot. Signor Mussolini sent his condolences to the Deputy's family.

Winter Air Tours

DURING a conference of the British Passenger Agents' Association on October 6, it was mentioned by Mr. S. A. Dismure, of Imperial Airways, that towards the end of January, the first European air travel route would be opened. The winter tour would cover about 5,500 miles, occupy 35 days, the total cost, including hotel accommodation, being between £350 to £400 a passenger. The places visited would be France, Spain, Morocco, Algiers, Tunis, Sicily, and others. Another speaker, Col. J. H. Stanley, drew attention to the new openings for agents in booking seats in aeroplanes.

In Memory

A REQUIEM Mass was held at the Church of the Immaculate Conception, Farm Street, on September 5, for Princess Louis of Lowenstein-Werthiem-Freudenberg, who was lost during an attempt upon the Atlantic when accompanying Col. Minchin and Mr. L. Hamilton.

Who Did That?

A PETROL tin fell out of an aeroplane as it was passing over Nottingham on October 3. It penetrated a roof of a house but injured nobody.—Good! We were told there was going to be a fall in petrol!



ROUND THE WORLD IN SIX WEEKS: Two snapshots received from Col. Broke-Smith in India showing, on the left, the "Pride of Detroit" monoplane of William Brock and Edward Schlee landing at Dum Dum Aerodrome, Calcutta, during the flight from Detroit to Tokyo; and on the right the Acting Consul General (U.S.A.) shaking hands with Schlee. The two airmen proceeded from Tokyo to San Francisco by steamer, and then continued in their machine to Detroit, arriving back there after an absence of six weeks.

CORRESPONDENCE

"ON COPYING"

[2160] I am forwarding you herewith a copy of a letter I have addressed to the editor of the Italian *Aeronautica* journal. The statements referred to in my letter were contained in the September number of the journal in question and, in my opinion, are so serious as to call for refutation. Perhaps your readers may be interested in this matter.
29-30, Charing Cross, S.W.1.

October 10, 1927.

OSWALD SHORT

[ENCLOSURE.]

DEAR SIR,—On my return from Venice, my attention has been called to an article entitled, "Discutiamo di Priorita di Tipi" appearing in your journal of September last.

In the course of this article, there appears the following statement:—

"It is a well-known fact that, in July, 1926, Mr. Short, builder of the 'Crusader,' when on a visit to Macchi's workshops, inspected the M.39 plane in its smallest details; and the side and front views of the M.39 have been produced by the English technical papers, together with plans to scale giving the most important measurements, though the latter were partly wrong, as who divulged them did not reproduce them with exactitude."

When I read this article, I did not know whether to be annoyed at having been labelled as a spy, or flattered to be credited with such a retentive mind; that, having viewed the M.39, I should be able to return to England, and cause such exact copies of the machine to be made, as not only to equal it in performance, but actually to exceed the speed of the original by some 30 or 40 miles an hour.

The accusation, however, that British Aircraft Designers should be dependent upon Mr. Castoldi for ideas, is so absurd that one could be excused for totally ignoring the statements which have been made in the article referred to.

On the other hand, however, silence might be taken as an admission of guilt. It is, therefore, necessary to state a few facts, and I trust, that having published the article in question, both in Italian and English, you will have the kindness to publish this reply in a like manner.

The true facts of the case are as follows:—

I visited Italy in 1926 at the invitation of two Italian firms, who were interested in the particular form of all-metal aircraft which Short Brothers have produced in England, and who were desirous of entering into business relationships with my firm. In the course of my visit to the Macchi works I was very openly shown the M.39, that day undergoing its first engine test. My attention was first directed to its floats, and I remarked that so far as the lines were concerned, I could have

sworn that they had been made in our shops at Rochester. Mr. Macchi's representative replied, smilingly, "Yes, when Mr. Macchi, Jnr., was in America last year (1925 Schneider Trophy Race) no doubt he kept his eyes wide open."

Mr. Macchi Jnr. also remarked to me that it was curious that the floats which we had built (all-metal for the Gloster and Supermarine machines) a year earlier, should have the step in the same position as the floats they were now showing me, and enquired why the Americans placed their step farther aft.

In this connection, it must be remembered that, in 1925, Messrs. Macchi entered a flying-boat for the Schneider Trophy Race, and it was after the defeat of their machines, and after Mr. Macchi Jnr.'s visit to America, that they turned their attention to a twin-float seaplane similar to the British and American machines which took part in that race.

After seeing the M.39, the opinion I formed was that Mr. Macchi Jnr. had followed a very wise course in which he was entirely justified, and which reflected much credit on his judgment.

In 1925 he saw the British and American machines which competed with his own for the Schneider Trophy. He observed the clean lines of the British floats, and the fact that they made little splash and did not porpoise on landing, whereas the American floats did.

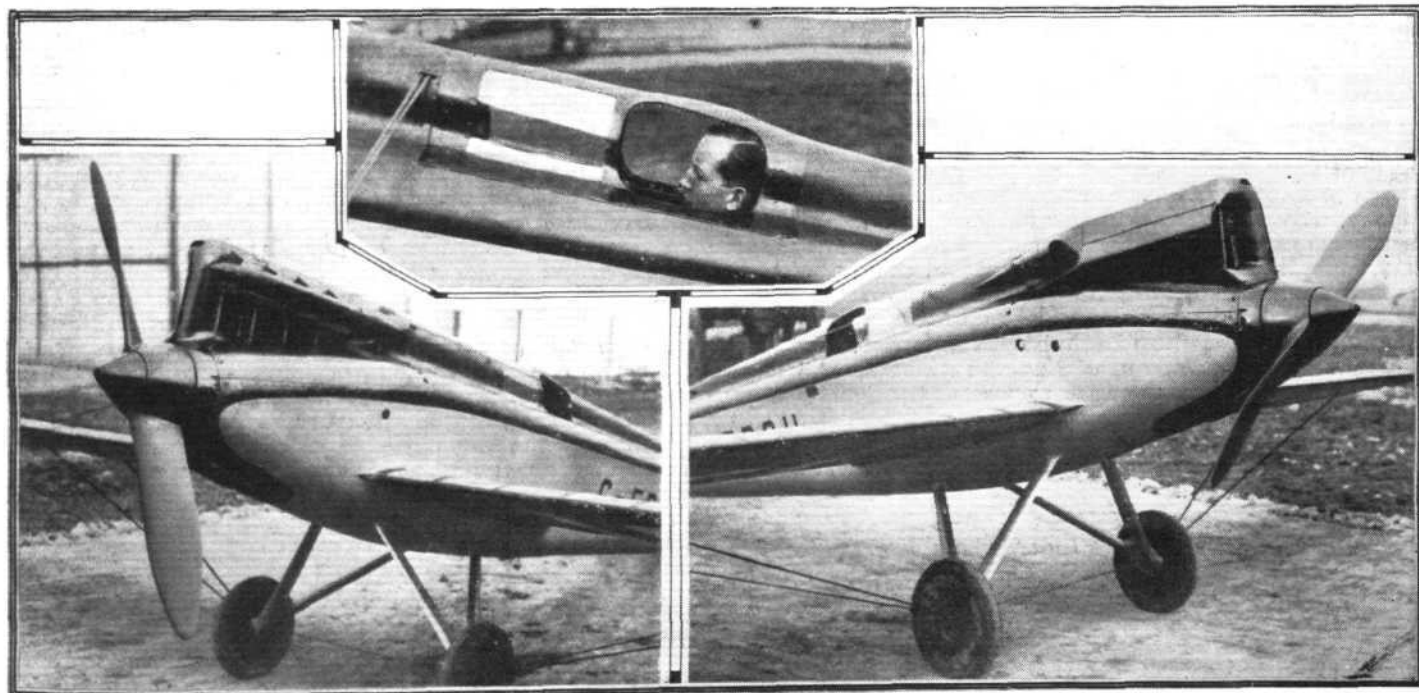
He observed the clean lines of the Supermarine monoplane construction, but noticed that the attempt to produce a comparatively thin wing in pure cantilever, led to wing trouble. He also observed that the American float strut system was the cleanest, and obviously of sound design. Putting these facts together no doubt led to the design of M.39.

The M.39, as it appeared in 1926, was, in fact, a combination of all the good points in the British and American machines of 1925, and no one begrudged Messrs. Macchi the credit of their achievement.

To avoid the trouble which the Supermarine monoplane had experienced in 1925, it appeared obvious that the wings should be braced to the floats, and to the top of the fuselage by wires, and this requirement alone, quite apart from the question of a good view out of the machine, would suggest the need of dropping the wing, so as to obtain a reasonable angle on the wing-bracing wires.

The writer of your article must give British designers credit for sufficient brains to see facts after their experience in America in 1925, equally with Mr. Macchi and Mr. Castoldi; and in the light of recent events we must admit that the former have gone a great deal farther in wing design and in the reduction of float and fuselage resistance.

Also, after this last race, what becomes of those "most important measurements" . . . "which were partly



["FLIGHT" Photographs]

STILL MORE REFINEMENT: When the de Havilland "Tiger Moth" first made its appearance it was difficult to see where further head resistance could be saved. As a matter of fact, it is believed that a good deal more has been saved by refinements recently incorporated, such as the new engine cowling and the fairing of the pilot's head. Capt. Broad, who is seen in the cockpit, states that there is now no draught at all in the machine, while the view is still reasonably good. It is likely that something will be heard of the machine shortly in connection with a new record attempt.

wrong, as who divulged them did not reproduce them with exactitude"?

What are the exact measurements, which, known to a designer, will enable him to win the Schneider Trophy at any time? It is quite obvious that if they exist, Mr. Castoldi did not use them this year.

If we are to enter into an argument as to who originated the

tractor twin-float, low-braced wing monoplane, we shall no doubt ultimately discover that none of the designers of Schneider Trophy machines of this year, or of any other year, are entirely responsible.

It is a type produced from previous examples, by putting together accumulated knowledge and facts, free and open for all to use, and possibly then it is only a passing phase in design.

REVIVAL OF THE SEMI-RIGID AIRSHIP

A British Company Planning New Design

So much has been written and spoken of the rigid airship of recent years, that another type, the semi-rigid, appears to have been entirely forgotten. Yet there is no denying the fact that the semi-rigid type offers certain advantages as compared with the rigid. This is a subject to which we have referred on several occasions during the last few years, but it may be as well to recapitulate very briefly some of the points in favour of the semi-rigid airship. To begin with, the non-rigid and semi-rigid airship is practicable in small sizes. (We are aware that there are those who believe that nothing smaller than several million cubic feet is the slightest use, but we are by no means convinced that this view is justified.) The rigid airship, on the other hand, cannot be built economically (from a structural point of view) in small sizes, owing to the excessive weight of the structure. Thus any experimental airship programme based upon the rigid type must, of necessity, be on a large scale, which is another way of saying that it must involve rather considerable cost. The small non-rigid or semi-rigid airship can be made economically in quite small sizes (in fact the pro-rigid advocates will probably claim that it cannot be made of a sufficiently large size to be any use), and thus the cost of experimenting need not assume quite the vast scale necessary with the rigid.

Another advantage which results from the non-rigid and semi-rigid construction is that, should the airship be compelled to alight, there is at any rate a very good chance of saving the ship by deflating it, whereas a rigid, in similar circumstances, is almost certain to become a total wreck.

Moreover, if we visualise an operational company with several airships in commission, and suppose that for some reason one of the airships is not required for a time (it may be in reserve for instance), a rigid airship under these circumstances occupies just as much shed space as does one which is in use. The semi-rigid can be deflated when not in use, and thus a great deal of shed space can be saved.

Of the relative structural and aerodynamic efficiencies of the two types we do not feel qualified to speak, but it is probable that each has its advantages and drawbacks.

That the semi-rigid suffers from certain disadvantages may be admitted, but it is believed that most of these could be overcome if sufficient experimental work were done on this type of ship, and a British company has recently been formed with the object of designing a semi-rigid airship along somewhat unorthodox lines, in which it is believed that nearly all the drawbacks of the type will have been overcome. This company, whose title is British Airships, Limited, has established headquarters at 21, Northumberland Avenue, London, W.C.2, and all its directors are retired Naval Officers, while

the technical manager is Mr. C. F. M. Chambers, who served in the R.N.A.S., and whose connection with aviation dates back to 1911, when he was flying with Mr. H. Barber on the Valkyrie monoplane, on which he took his R.Ae.C. certificate at the age of 19. The designer of the firm is Mr. V. Graham Wood, who has flown since 1912. The company does not propose to engage in constructional work but will confine itself to the designing side, the work of actual construction being entrusted to various firms in the aircraft industry.

No data relating to the new airship are available at the moment, but we are informed that it will be of the semi-rigid type, with a range considerably in excess of those usually associated with semi-rigid airships of similar size, obtained in the main by careful aerodynamic design and the suppression of excrescences offering extra resistance.

In the design of the new airship a new method of weight distribution in the keel is claimed to have been evolved, and a new form of suspension of the keel from the envelope.

The new design is based upon a total horse-power of 1,200 (although the speeds are estimated on 800 h.p., as it is desired to have an ample reserve of power for overcoming adverse weather conditions), a range of 1,500 miles, a cruising speed of 50 m.p.h., and a top speed of 70 m.p.h., with a useful load of 4 tons, of which the passenger load may be approximately half, the rest being available for mails and luggage.

An interesting feature of the new design is that it is believed that with the form of construction adopted the airship can be produced for a cost of approximately £1,000 per ton. The company does not definitely claim that it will be possible to get down to this figure with the first ship, but points out that if it can obtain the range of 1,500 miles with something approaching the estimated useful load and about the 800 h.p. contemplated, it will have produced an airship that compares very favourably indeed with, for instance, a three-engine aeroplane costing some £22,500, with a range of some 340 miles and carrying 20 passengers, and with the additional advantage of being able to operate during foggy weather and at night time. The cruising speed of 50 m.p.h., over long distances, flying night and day, will virtually be equivalent to an aeroplane cruising speed of 90 m.p.h.

The question of mooring or housing is always an important one in any airship scheme, and in this respect British Airships, Limited, believe that they have evolved a system, resulting from the special construction of the airship, which will allow of landing and manœuvring the airship in any circumstances without the use of a mooring mast or a landing party.

Altogether, the new airship company appears to have some very interesting work under way, and we hope to be in a position to give technical details at a later date.

A New British Non-Stop India Flight Attempt.

CAPT. R. H. McINTOSH, of Imperial Airways, who unsuccessfully attempted the east to west Atlantic crossing recently, is now preparing for a non-stop flight from England to India. He will employ the same Fokker-"Jupiter" machine used in the former effort, and will start from Upavon some time this month.

More American Atlantic Flights

ON October 11, Miss Ruth Elder, who recently obtained her pilot's certificate, and Capt. George Halderman (pilot and navigator) set out from Roosevelt Field, Long Island, in a Stinson-Detroit monoplane (Wright "Whirlwind") with the object of crossing the Atlantic to Paris. This sudden attempt arises out of the fact that Mrs. F. W. Grayson, a niece of the late President Wilson, flew from New York to Old Orchard Beach, Maine, whence she intended to start, on October 12, for an Atlantic flight to Copenhagen, in a Sikorsky Amphibian (2-Wright "Whirlwind"), piloted by Wilmer Stultz, U.S. Army pilot.

Paris-S. America Flight

CAPT. COSTES and Lieut. Le Brix set out from Le Bourget on October 10 in a Breguet IXA2 biplane (Hispano-Suiza)

with the object of flying to Brazil and Buenos Aires. It is intended to make the flight in four stages—Paris—St. Louis (Senegal)—Port Natal—Rio de Janeiro—Buenos Aires. Their machine, the "Nungesser-Coli," carries, besides 620 gals. of petrol, about 10 cwt. of baggage, including letters and newspapers. Food for the flight comprises three filleted chickens, fruit, biscuits, Thermos bottles of coffee and soup, and a bottle of champagne! The machine is also fitted with wireless. Some 25½ hours after leaving Paris the two airmen arrived safely at St. Louis, where they had a short rest before setting out on their flights across the Atlantic.

Thanks!

OUR hearty thanks to the 10,793 readers who wrote to us and telephoned us pointing out the error on p. 684 of last week's issue of FLIGHT in which a Macchi was erroneously described as a Supermarine in the inscription under a photograph. The mistake was not discovered in time for a correction to be made, although the first telephone call on Friday morning from a irate reader did not come as a surprise, as we had by then already spotted the error. It is, however, very gratifying to be made to realise that FLIGHT is not permitted to make a mistake.

FIRST ENTRIES FOR GUGGENHEIM COMPETITION

Five British Firms Already Included

ON Monday of this week it was announced by Maj. R. H. Mayo that seven official applications have been made for entry into the Guggenheim Safe Aircraft Competition, which is now open. Details of the rules and regulations governing this competition were published in *FLIGHT* of June 16, 1927, and it will thus suffice if we remind our readers that the fundamental object of the competition, which owes its inception to the magnificent generosity of the American Daniel Guggenheim Fund for the Promotion of Aeronautics, is "to achieve a real advance in the safety of flying through improvement in the aerodynamic characteristics of heavier-than-air craft, without sacrificing the good practical qualities of the present-day aircraft." Maj. Mayo, it will be recollected, is British representative of the Guggenheim Fund.

At the moment of writing, seven firms have applied for entry, of which five are British. These are:—

The Cierva Autogiro Co., Ltd.
The de Havilland Aircraft Co., Ltd.
The Gloster Aircraft Co., Ltd.
Handley Page, Ltd., and
Vickers, Ltd.

The American applications are from:—

The Schroeder-Wentworth Co., of Chicago; and
The Hall Aluminium Aircraft Corporation of Buffalo, N.Y.

In addition to these definite applications for entry, Mr. Fokker has signified his intention of filing an application at a later date, while a number of prominent British and American aircraft manufacturers are engaged in studying the competition with a view to making application for entry if possible. It is also expected that applications will be received from a number of French, German and Italian manufacturers.

From a British point of view the number of entries already made is particularly gratifying, as it is a clear indication that the vital importance of achieving safety in flying has been fully realised in this country. It is to be hoped—and indeed it is confidently expected—that several other British firms will enter machines.

Maj. Mayo points out that while emphasising the importance of safety in flying, one should not overlook the high standard of safety which has already been achieved in organised air transport. Thus Imperial Airways have run their services with a regularity and safety which is at least equal to those of other means of transport. The fact remains, however, that accidents do occur frequently in other forms of flying, and until these accidents are greatly reduced in number it will be difficult to convince the general public of the safety of organised air transport.

Maj. Mayo also made the interesting announcement that the site for the competition has now definitely been decided upon. It will be Mitchell Field, Long Island.

British competitors will be interested to learn that Maj. Davidson, the former United States Military Air Attache in London, will be the field manager during the Guggenheim competition. Maj. Davidson is very well and favourably known in British aviation circles, having been extremely popular during his all-too-short stay in Great Britain, and his appointment will, we feel certain, be greeted with satisfaction in this country.

Readers wishing for full particulars of the Guggenheim competition, other than those published in *FLIGHT* of June 16, 1927, are reminded that such can be obtained from Maj. R. H. Mayo, O.B.E., whose address is 8, New Square, Lincoln's Inn, London, W.C.2.

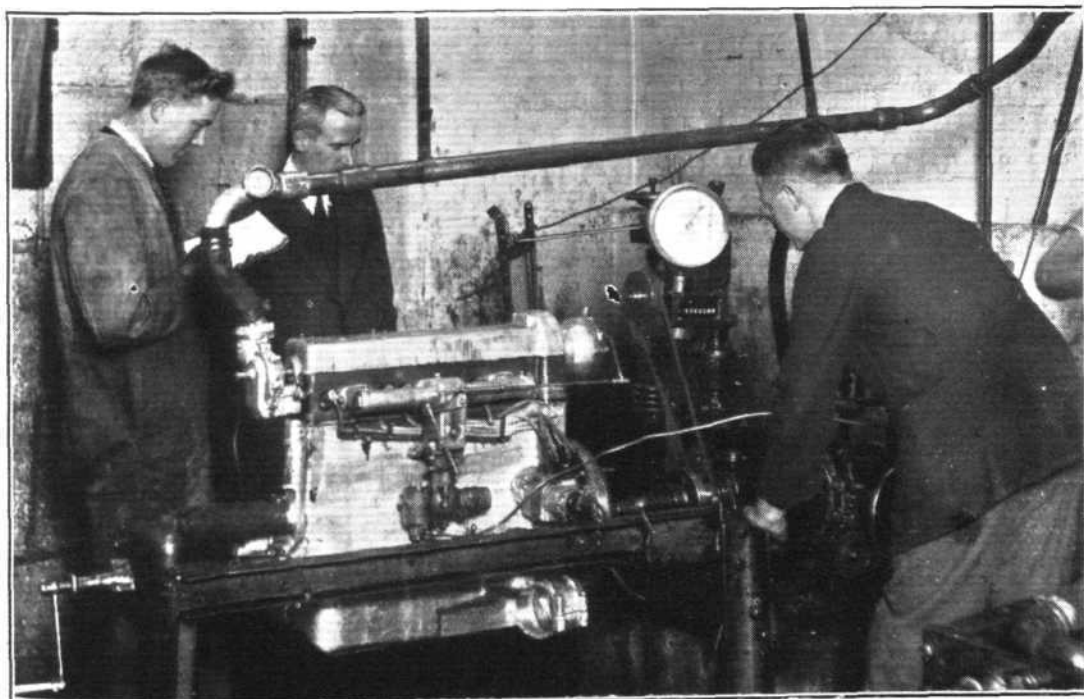
The Guggenheim Equipment Loan

AN equipment loan to finance the purchase of three multi-engined modern passenger-carrying aeroplanes, to be operated on a model passenger airway between Los Angeles and San Francisco by the Western Air Express, has been authorised by the trustees of the Daniel Guggenheim Fund for the Promotion of Aeronautics. It is the intention of the Western Air Express to establish regular service on this air line early next year, on a three-hour daylight schedule over a route, which, in accordance with the Fund's policy, must be approved for passenger transport by the Aeronautics Division of the Department of Commerce. This is the first equipment loan to be made by the trustees in accordance with the recently-adopted policy of the Fund, reference to which appeared in a recent issue of *FLIGHT*. The distance

between Los Angeles and San Francisco is 365 miles, and the time necessary for flight over this route will be approximately three hours. Planes will leave either terminal at 10.30 a.m., and will arrive at the other terminal at 1.30 p.m. Airports in both cities are situated within 30 mins. from the business sections, so that office-to-office movements may be completed within four hours, as compared with the 13½ hours now required by train.

"Gloster's" New Chairman

OUR readers may be interested to learn that Mr. A. W. Martin, who was Chairman to the Gloster Aircraft Co., Ltd., of Cheltenham, has now severed his connection with this company. Mr. D. Longden, who is Managing Director of the firm, is now the Chairman.



Acèdes Engines for R.100. Our picture shows one of two A.C. (Acèdes) engines that will be employed for driving the auxiliaries in the rigid airship R.100. This engine, which is seen undergoing an official test, is the normal six-cylinder Acèdes engine produced by the manufacturers of the famous A.C. cars at Thames Ditton, except for the provision of a governor on the rear end of the camshaft, to control the speed within 2½ per cent. of a given number of revolutions.

"AVIATION"

Mr. F. Handley Page in Optimistic Mood

THAT by making full use of such aids to aerodynamic efficiency as are known at the present time, and by using the most efficient constructional materials, we should in the future be able to produce aircraft capable of taking off and flying satisfactorily with 25 lb./h.p. and carrying useful loads per horse-power of 14.85 for 4 hours, 14.15 for 6 hours, 9.25 for 20 hours, and 2.25 for 40 hours, was the prediction made by Mr. Handley Page in his lecture to "The Royal Aeronautical Society with which is incorporated the Institution of Aeronautical Engineers," on October 6. This ideal state of affairs also presupposed a fuel consumption of 0.35 pint per h.p./hr., and an engine weight of 1.75 lbs./h.p., including propeller. A geared engine was also assumed. Col. the Master of Sempill, Chairman of "The Royal Aeronautical Society with which is incorporated the Institution of Aeronautical Engineers," was in the chair, and before introducing the lecturer he tendered the congratulations of the society to the Supermarine Aviation Works and to Napier on the remarkable achievement attained in the Schneider race, and also to Webster and the other pilots, and to the Air Ministry. The meeting was also noteworthy as being the first to be held after the amalgamation of the Royal Aeronautical Society and the Institution of Aeronautical Engineers. He read a letter written to the society in 1907 by a young experimenter by the name of F. Handley Page, who wished to be put in touch with Mr. Weiss in order that he might ascertain whether his (Mr. Handley Page's) work was really of any value. From that modest beginning that evening's lecturer had attained a position of prominence in aviation and his aerofoil slot was one of the greatest contributions to aeronautics ever made.

Mr. Handley Page said that with the opening of the present session a new sphere of activity was entered upon in that the society welcomed into its circle the membership of the Institution of Aeronautical Engineers. It was, therefore, an appropriate time for reviewing the progress of aviation to date, examine the state of the art to-day, and see if the progress being made was as rapid as it might be if they had a clearer conception of what the ideal aeroplane of the future was likely to be, and had their minds more firmly fixed on the ideal. The time for such a review was also appropriate in that the influence of war-time development was passing and the more solid work of basic scientific research applied to practical development and construction was now having a marked effect on aircraft design.

With the approach of the second half of the ten years' contract under which State assistance to air transport was now given, it was also appropriate to consider the progress made in commercial flying and see how near was the possibility of civil aviation "flying by itself." State support must be a temporary necessity, warranted only just so long as aviation gave promise of a self-supporting or nearly self-supporting condition.

The lecturer then pointed out how, if one examined the progress of aviation from its birth in 1903, one saw the slow pre-war progress followed by the hothouse forcing growth during the war, when the urgent demand for production made impossible the inclusion of any radical experimental developments. Since the war there had remained with us the effects of the deep impressions created by war-time experience, and the memories of war-time exploits had engendered among pilots a rare and lasting affection for certain types of aircraft and for certain ideas in operation which it had taken years of the colder light of peace-time analysis to change. They were now beginning to see incorporated in design much that had evidently had its main-spring in technical research, and it was to be hoped that in the coming years they would see an increasing advantage taken of the fundamental scientific progress which had been made in this country with a consequent rapid development of aircraft design.

To illustrate the progress of the past years, the lecturer showed lantern slides of world's records for speed, altitude, distance and duration. If this progress had been made in 24 years of flying, what limits, he asked, were they likely to reach, what increases in performance were probable in the near future, and to what improvements in efficiency could they look forward, so that the cost of flying could be reduced to a commercial level.

In examining the problems the lecturer sub-divided his examination into the following heads: (1) Structural design; (2) aerodynamic design; (3) power unit and airscrew; and (4) design from the user's point of view.

Structural Design

Under (1) Mr. Handley Page pointed out that it was a matter of extreme difficulty to obtain accurate statistics as to what was or was not comprised in the structure weight of aircraft. From the academic point of view, the aircraft structure should include nothing except what was required solely from the point of view of carrying the weight into the air. As a rule, however, the design had to be modified to make provision for special equipment and it became difficult, if not impossible, to separate this from that of the general structure. Surveying the subject on the broadest possible lines, it might be said that for similar types of machines with similar factors of safety there had been no very striking improvement in structure weight percentages during the last few years. In fact there had been a tendency for structure weight percentages to increase, due to more rigid requirements in regard to factors of safety. One might therefore say that unless further improvement was made in the materials there was no great hope of a reduction in the structure weight percentage. One fact was certain, i.e., that all-metal aircraft would eventually replace those built of wood, owing to their greater durability and smaller cost of upkeep.

The research and development work made in steel and light alloys during the past years gave great hope that the necessary improvement in materials would be forthcoming. Progress in drawn-steel tube might cause tubular construction in steel to be an active competitor of built-up strip construction. For instance, solid-drawn tubes could be obtained in 30 gauge which after heat treatment gave up to 90 tons tensile strength. Steels suitable for

welding could now be obtained which gave 35 to 40 tons per square inch after welding, and a particular development which should be watched for its ultimate utility was the use of non-corroding or stainless steels to give a strength up to 60 to 70 tons per square inch and 40 tons after welding.

Greater possibilities lay in the use of the light metals and their alloys. Duralumin in particular had been widely used in this country, and future improvements were likely to arise from the use of the lighter metal magnesium and some of its alloys. Magnesium had the greater advantage over aluminium as far as this country was concerned that there was a plentiful supply of the raw material available in large deposits in this country and in Ireland. Slides were shown giving characteristics of magnesium alloys, and the lecturer stated that the material could be protected by a treatment similar to the anodic treatment. This treatment was not so effective as in the case of Duralumin, but formed a good foundation for further protective covering.

Another interesting material, if sufficient supplies could be found, was the element Beryllium, which, with a specific gravity of 1.84, had a hardness sufficient to scratch a piece of glass, while its melting point was as high as 1,280° C. At present the cost of this element was rather prohibitive, i.e., approximately £5 per kilogram, or, roughly, the same as the price of silver, so that at present it was somewhat beyond the reach of even the most plutocratic Air Ministry or aircraft constructor.

Saving in weight of tanks by the use of aluminium and magnesium was also prophesied by the lecturer, and in concluding this section of his paper Mr. Handley Page said that in taking into account various developments it would seem that for normal size commercial aircraft a structure weight percentage of not more than 27½ should be reached.

Aerodynamic Design

Under (2), aerodynamic design, there was a wider field for improvement. The aerodynamic results obtained from an aeroplane depended, unfortunately, not merely on the characteristics of the wings determined in model size in a wind tunnel, but also upon the resistance due to the body and the projections which were forced upon the design due to the requirements of the user. Very often the user's requirements were based upon equipment designed by specialists who had designed similar equipment for other but slower means of transport. It took many years to change the fashions of the user's requirements, not merely in aviation, but in every other form of transport. To illustrate this the lecturer showed a series of slides of early and modern locomotives, motor cars and vessels.

If one looked at aircraft of today one thought with wonder of the scientific research that had been expended and the mathematical analysis that had been conducted to evolve wing sections and plan forms with the smallest possible value for minimum drag, etc. When, however, one looked at the fuselage one sometimes speculated whether it must not have been a different set of engineers, or perhaps even a different race, which were responsible for open cockpits, projecting gun-rings and guns, pumps and other excrescences, which, projecting from the fuselage, added resistance to good and bad machines alike, and tended to reduce all aircraft to one common level of inefficiency.

Slides of various prehistoric flying creatures and birds illustrated how nature in the earliest days of bird development had much to learn in aircraft construction, and the diminution of head resistance. It was seen that vast improvement had been made by nature in the long millions of years of natural development.

If they really wished to improve performance, whether in commercial or military aircraft, they must produce aircraft with fine lines. To achieve that they must reduce as far as possible the overall size. And if this was only possible with equipment of smaller dimensions, then the equipment must be designed to fit in with the performance required.

Again a series of slides was shown illustrating the progress in refinement from the early Wright machine to some of the latest type. It was, however, evident how far improvement could still be made provided the pilots were content to use other means of view than those employed today. It was evident that eventually pilots, as well as crew or passengers, must be totally enclosed, but given adequate means of vision, either by seating them well forward in a closed cabin without obstacles in front of them, or by some periscope device, so that true vision could be obtained without added head resistance.

The head resistance of the undercarriage was another item with which they had to deal. This component was not required in the air, and was useful only in landing and taking off. The bird in flight folded its legs under its tail. The advantages of the folding undercarriage were so great that the mechanical problem would undoubtedly be solved. A good modern aircraft

had a maximum value of $\eta \times \frac{L}{D}$ of just over 7. If the interference effect

between body and wings could be successfully dealt with, and these excessive head resistance items be eliminated, it should be possible to increase the maximum $\eta \times \frac{L}{D}$ to 10 or even 12 at climbing speed, and a correspondingly increased value at top speed of perhaps 7 or even 8.

Another aspect of aerodynamic design which could not be measured in figures, but which was important for the safety and control of aircraft, was the problem of what happened at and beyond the stall. He thought the new Handley Page automatic slot at the wing tips represented a marked advance without any adverse effect on high-speed performance.

Power Plant

The lecturer said he sometimes thought that greater progress had been made in the development of aero engines than in the aeroplane itself, but for trans-atlantic non-stop services there was a battle to be fought out between the Diesel engine using heavy oil and the petrol engine with very high compression and using special anti-detonating mixtures. The low consumption figure of 0.35 pint per horse-power per hour of the Diesel was somewhat offset by the heavier type of oil used, but the great advantage was the use of heavy fuel oil which reduced the risk of fire. The most important feature of the power plant was the propeller, and the lecturer here pointed out the advantage of the geared engine which gave good propeller efficiency even when the high power of the engine was obtained by running at high engine speeds.

Turning to the subject of the user of the aeroplane, Mr. Handley Page said that future aircraft must provide more comfort for the passengers. Noise would only be eliminated when relatively less power was used, with slow-running geared propellers.

The Machine of the Future

By paying full attention to the improvements outlined, it should in the future be possible to reduce structure weight to not more than 27.5 per cent.

The maximum figure of 10 or 12 should be reached at climbing speed, and 7 to 8 at top speed. The petrol consumption should come down to 0.35 pint per horse-power per hour. By incorporating these improvements we should get aircraft of the characteristics outlined at the beginning of this report. With only 250 h.p. they would be able to carry practically the useful load of one of the big twin-engined machines of today, and with 1,000 h.p. they would be able to fly from London to Cairo non-stop with a paying load greater than that carried on the short distances covered with similar power today. Such a machine would have a speed of over 100 m.p.h. and a rate of climb at ground level of about 500 ft. per minute.

Subsidies

Turning to the question of subsidies, Mr. Handley Page briefly reviewed the basis of subsidies as granted in this country at the present time. Ton-mileage and not horse-power mileage was the criterion of economic progress. Under existing conditions there was less incentive to scrap an existing fleet in order to improve carrying capacity than would have been the case if the payment were made on the lines recommended by Lord Weir's Committee in 1920. The lecturer then made the very sound statement that in all forms of transport it was found that often people could afford to pay first-class fare over short distances, but had to economise when it came to the long routes, and travel third class. The following epigram, delivered by Mr. Handley Page, deserves to be noted: The Empire routes are not alternative to making European routes economic; they depend upon economic operation having been learned in Europe. In America the air services were becoming an integral part of the postal organisation, and were paid only for the services which they rendered, namely, for the mails which they transported.

In conclusion, Mr. Handley Page said:—"To-day, reviewing all the progress which has taken place, no one can say whether the genius of the human race will develop its mechanical transport to such an extent that, old and new worlds conquered and the sea bridged, it will seek a new outlook to its endeavour by seeking, and perhaps succeeding, in bridging the vast distance between this earth and other habitable units of our solar system, or whether, having reached a comparative finality in mechanical progress, mankind will rest content with a wireless representation of voice and features of those who would communicate each with the other, rendering unnecessary that costly transport of the human body, which is of little use other than as a containing medium of a directing mind."

THE DISCUSSION

Major Wimperis referred to the letter, read by the chairman, from a diffident youth who had, during the intervening 20 years, developed into the famous constructor. He hoped that a similar change would take place in aviation in the next 20 years. The aeroplane of the future must be as easy to control, and as safe, as a motor car. The slot control developed by the lecturer helped towards that. If that was not found sufficient, they might have to look to the machine in which, although the machine as a whole slowed down, the wings continued to travel at high speed and thus to lift. In this connection, it might interest the audience to know that quite recently the "Autogiro" had made a cross-country flight of 50 miles.

Mr. Bramson would like to know whether it would not be possible to save structure weight by a better distribution of the material, such as by making use of the covering or skin as a structural member. Also, in very large machines, would it not be possible to eliminate the fuselage by enclosing the passengers in the wing.

Air Vice-Marshal Sir Sefton Brancker agreed with the lecturer on the subject of subsidies. He hated subsidies, but hitherto they had been necessary. It was now up to constructors to produce really commercial machines. They could not wait 20 years for them. He thought they were much nearer to making aviation pay than the lecturer imagined. American statistics concerning the new air mail lines were very promising. In this country, machines and engines were much cheaper to maintain than was the case two or three years ago. The new basis for the subsidy was designed to encourage the use of larger machines. Finally, he entirely disagreed with the lecturer in his remarks concerning the useless body. He, at any rate, very much desired to keep his. (Laughter.)

Captain Sayers referred to the difficulty of getting pilots to accept the enclosed cockpit, and suggested that pilots be sent to Canada, where they might have to fly in a temperature of 40 degrees below zero. That would probably convince them of the advantages of an enclosed cockpit. As

regards making aviation pay, he suggested that constructors should make enquiries in Canada, where there were many opportunities for making aviation pay, even with machines as we knew them today.

Major Bulman said the lecturer appeared to have overlooked one important factor in connection with the engine, and that was, its head resistance. At present they were using quite a large percentage of power in pulling the engine itself through the air. It was important to get the aircraft and engine people closer together. On the score of consumption, if one took a number of pilots and let them fly the same machine over the same course, they would obtain very different fuel consumptions, according to how they used their throttle, altitude control, etc.

Mr. Manning called attention to the advantages of variable pitch propellers in conjunction with geared engines. As regards the lecturer's remarks concerning fuel consumption, he thought that the low figure quoted, although possibly attainable by the petrol engine at full throttle, would not be easy to get when throttled, in which condition the advantage would probably lie with the Diesel type of engine.

Squadron-Leader England called attention to the importance of the time factor in the progress of improvement. It was necessary to speed up the official tests of new machines. He disagreed with Captain Sayers as to the necessity of sending pilots to Canada in order to make them appreciate the enclosed cockpit. The pilots at home flew in all sorts of weather, and flying in a cold was not really as uncomfortable as flying in a fog, or sandstorm. Excessive heat was worrying, and heat bumps were uncomfortable.

Major Mayo said it was a pleasure to hear Mr. Handley Page come out in the open as an optimist. He had hitherto been more of a pessimist. When, however, he came back to aircraft operation he once more became the pessimist. The operator of aircraft used the best machine he could get, and if designers produced machines of really outstanding merit, those machines would ultimately find their way into service. He rather thought there were discrepancies in the lecture. First, the lecturer criticised excrescences on fuselages. Then, later on, he spoke of carrying 70 passengers on 1,000 h.p. If one stopped to think of the size of fuselage required, one arrived at the conclusion that it could not be done. Great improvement could be made, but not as great as that. On the question of subsidies, it was difficult to do without practical experience, and it would be necessary not only to buy new types of improved machines, but also to run them so as to test them under actual operating conditions. What was wanted was a substantial extra subsidy for experimental aircraft. Finally, he pointed out that if machines were always filled, all the year round, there would be no need for a subsidy. The only way to make aviation pay was to make it safe.

Mr. Handley Page, in replying, said he would attempt to overcome his natural diffidence. (Laughter.) To Major Wimperis, concerning the rotating wing machine, he recommended a study of an article on levitation in *Punch*. To Mr. Bramson he would say that machines in which the skin was used as stress-bearing structure had proved heavier than the more usual type. On the subject of subsidies, referred to by Sir Sefton Brancker, his point was that it was useless to open new lines if these did not bring us nearer to making aviation fly by itself. The subsidies should be based upon the useful load transported, as suggested by Lord Weir. In America they were doing that by carrying air mails. To Capt. Sayer's suggestion of sending pilots to Canada, he thought that the Martlesham pilots, who went up to great altitudes, were sufficiently used to the cold.

On the subject of gearing, this simply had to come. He asked them to look at what had happened in the case of turbines in steamers. The engineers grumbled at gearing, but nowadays all turbine steamers had geared turbines. In aviation an excellent example of what could be accomplished by gearing was provided by the little Klemm-Daimler monoplane with its 686 c.c. engine. This was a two-cylinder engine of the flat-twin type, and was provided with a three-to-one gear, an arrangement which he had been told in this country was impracticable. Yet that small engine lifted two people into the air.

Major Mayo had referred to the size of fuselage to take 70 people. The thing was that, whatever the size of fuselage, it should have no excrescences, and in a large machine the fuselage would merely be in proportion. The pilot should be in a properly-protected cabin. He then related, as an illustration of how meteorological conditions were doing much to prevent aviation from "flying by itself," a personal example. He wished to go to see the Schneider race. The trains were booked up. He tried to go by air to Basle, but on the day he was going there was a fog and the machines could not go.

THE ROYAL AIR FORCE

London Gazette, October 7, 1927

General Duties Branch

The following Pilot Officers are promoted to rank of Flying Officer:—C. E. Eckersley-Maslin; July 6. E. G. Olson; July 12. W. L. Bateman; July 16. J. McGuinness; Sept. 1. J. W. Duggan; Sept. 13.

Flying Officer (Hon. Flight-Lieut.) C. W. Croxford, D.S.C., takes rank and precedence as if his appointment as Flying Officer (Hon. Flight-Lieut.) bore date July 14, 1925, immediately following Flying Officer C. F. Stevenson on the gradation list. Reduction takes effect from Sept. 6. Flight-Lieut. R. W. F. Dunning is transferred to Reserve, Class A; Oct. 6.

Medical Branch

Flying Officer R. J. K. Chattey is promoted to rank of Flight-Lieutenant; Sept. 28. Flight-Lieut. F. W. G. Smith, M.B., B.A., is transferred to Reserve, Class D.II; Oct. 8.

ROYAL AIR FORCE INTELLIGENCE

Appointments.—The following appointments in the R.A.F. are notified:—

General Duties Branch

Squadron Leaders H. I. Hammer, D.F.C., A. T. Williams, O.B.E., and R. H. M. S. Saundby, M.C., D.F.C., A.F.C., to R.A.F. Staff College, Andover, 19.9.27. C. R. Cox, A.F.C., to No. 47 Squadron, Egypt, 15.9.27. A. A. B. Thomson, M.C., A.F.C., to Headquarters, Iraq, 20.9.27. C. B. Dalison, A.F.C., to Aircraft Depot, Iraq, 20.9.27.

Flight-Lieutenants—C. Turner, A.F.C., to Air Ministry (Directorate of Technical Development), 26.9.27. G. D. Daly, D.F.C., to Home Aircraft Depot, Henlow, 12.9.27. L. R. Briggs, to No. 407 Flight, Donibristle, 1.9.27. A. P. M. Saunders, B. J. Silly, M.C., D.F.C., F. W. Walker, D.S.C., A.F.C., M. Moore, O.B.E., W. F. Dickson, D.S.O., A.F.C., P. H. Mackworth, D.F.C., J. W. Jones, A. O. Lewis-Roberts, D.F.C., J. J. Lloyd-Williams, M.C., V. E. Groom, D.F.C., C. P. Brown, D.F.C., A. P. Ritchie, A.F.C., and E. J. Kingston-McCloughry, D.S.O., D.F.C., to R.A.F. Staff College, Andover,

RESERVE OF AIR FORCE OFFICERS

General Duties Branch

Pilot Officer A. W. Lindsay is promoted to rank of Flying Officer; Sept. 30. The following Flying Officers are transferred from Class A to Class C:—S. S. Kirsten; July 27. K. H. Holley; Sept. 20.

Flying Officer G. G. Green relinquishes his commn. on completion of service; Oct. 1. The commn. of Pilot Officer on probation E. T. D. Offer is terminated on cessation of duty; Sept. 14.

AUXILIARY AIR FORCE

General Duties Branch

The following to be Pilot Officer:—No. 603 City of Edinburgh (Bombing) Squadron.—S. M. Musgrave; Sept. 5.

Princess Mary's R.A.F. Nursing Service

Sister Miss C. C. Kirkpatrick resigns her appointment; Sept. 18.

19.9.27. A. H. Beach, to No. 58 Squadron, Worthy Down, 26.9.27. H. S. Broughton, M.C., D.F.C., to No. 99 Squadron, Bircham Newton, 19.9.27. S. M. Park, to School of Technical Training (Men), Manston, 22.9.27. T. B. Bruce, M.C., to Station Flight, Upper Hayford, 16.9.27. J. H. Hagon and C. F. Toogood, to Armoured Car Wing, Iraq, 20.9.27. D. R. W. Thompson, J. H. Butler and T. A. Warne-Browne, D.S.C., to Headquarters, Iraq, 20.9.27. V. S. Parker and A. Leach, M.C., to No. 55 Squadron, Iraq, 20.9.27. A. Jerrard, V.C., to Aircraft Depot, Iraq, 20.9.27. K. L. Harris and H. G. Rowe, to No. 47 Squadron, Egypt, 17.9.27. H. E. Walker, M.C., D.F.C., to No. 2 Armoured Car Company, Palestine, 19.9.27. G. P. H. Carter, to Headquarters, Transjordan and Palestine, 19.9.27.

Flying Officers J. G. Franks, to No. 407 Flight, Donibristle, 1.9.27. E. A. Swiss, to No. 462 Flight, 1.9.27. E. M. Thompson, to No. 405 Flight, 1.9.27. (Hon. Flight-Lieut.) C. W. Croxford, D.S.C., to R.A.F. Depot, Uxbridge, 1.7.27. F. V. Beamish, to R.A.F. Cadet College, Cranwell, 16.9.27. H. D.

Mitchelmore, to R.A.F. Depot, Uxbridge, 15.9.27. G. Lloyd, to R.A.F. Depot, Uxbridge, 5.9.27. G. J. Southam, to Home Aircraft Depot, Henlow, 29.8.27. J. A. P. Harrison and A. W. A. Ricks, to No. 47 Squadron, Egypt, 19.9.27. P. de C. Festing Smith, to No. 14 Squadron, Palestine, 19.9.27. D. M. Rees, M.B.E., and F. Fazey, to Aircraft Depot, Iraq, 20.9.27. E. C. Barlow, to Armoured Car Wing, Iraq, 20.9.27. (Hon. Flight-Lieut.) C.W. Croxford, D.S.C., and G. W. Hayes, to No. 55 Squadron, Iraq, 20.9.27. (Hon. Flight-Lieut.) W. B. O. Fox and R. Kellett, to No. 84 Squadron, Iraq, 20.9.27. M. C. W. C. Flint, M.C., to Headquarters, Iraq, 20.9.27. J. T. Riggs, to No. 30 Squadron, Iraq, 20.9.27. J. G. Parkins and C. H. L. Evans, to No. 6 Squadron, Iraq, 20.9.27. C. A. Anderson, to No. 70 Squadron, Iraq, 20.9.27.

Pilot Officers.—P. N. Sealy-Allen, to No. 5 Flying Training School, Sealand, on appointment to a Permanent Commission, 17.9.27.

The undermentioned Pilot Officers are posted to No. 5 Flying Training School, Sealand, with effect from 17.9.27.—C. R. Shillingford, C. H. Appleton, B. E. Brown, M. C. Collins, T. A. D. Hetherington, H. G. Hicks, L. W. Howard, C. R. M. Kiernander, P. F. Luxton, J. E. Markby, K. C. T. Marshall, W. D. J. Michie, C. L. Myers, C. A. Pearson, H. L. Piper, J. C. K. Rogers, J. W. Smith, P. H. Smith, R. W. K. Stevens, J. C. B. Tinning, A. le R. S. Upton, J. B. Veal, A. D. Bennett, L. V. Bennett, F. Wells, J. A. Greenshields, D. M. Harrison, N. F. V. Henkel, L. G. Martin, to R.A.F. Base, Calshot, 16.9.27. R. J. Stone, to Armoured Car Wing, Iraq, 20.9.27. L. E. R. Fisher, M.C., and G. Selk, to No. 6 Squadron, Iraq, 20.9.27. J. Constable-Roberts and G. Francis, to No. 481 Flight, Mediterranean, 17.9.27. B. A. J. Crummy, to No. 70 Squadron, Iraq, 5.9.27.

Stores Branch

Flight-Lieutenant E. H. Eldridge, to Supply Services, Iraq, 20.9.27.

Flying Officers P. P. S. Rickard, to R.A.F. Station, Donibristle, 23.9.27. F. W. Felgate, to No. 30 Squadron, Iraq, 20.9.27. L. L. Bray, to No. 47 Squadron, Egypt, 19.9.27.

Accountant Branch

Flying Officer C. F. Goatcher, to No. 45 Squadron, Egypt, 19.9.27.

Medical Branch

Flight-Lieutenant C. V. D. Rose, to R.A.F. Depot, Egypt, 27.8.27.

Flying Officers J. E. Foran, M.B., to Heliopolis Details, 25.8.27. G. S. Strachan, M.B., to R.A.F. Station, North Weald, 9.10.27.

Chaplain's Branch

Rev. J. R. Walkey, M.A., to Headquarters, Halton, 1.10.27. Rev. W. T. Rees, B.D., to Headquarters, Cranwell, 17.9.27.



THE ROYAL AERONAUTICAL SOCIETY AND INSTITUTION OF AERONAUTICAL ENGINEERS

Official Notices.

Performance Testing.—A lecture will be given on October 13, at the Royal Society of Arts, 18, John Street, Adelphi, W.C.2., at 6.30 p.m., by Squadron-Leader T. H. England, D.S.C., A.F.C., on "The Practical Side of Performance Testing of Aircraft."

Squadron-Leader England has had many years' experience of flying and is at present Technical Adviser to Messrs. Handley Page, Ltd., on the Flying Side. His lecture will be very fully illustrated and he will deal with past and present methods of performance testing, giving details of the methods and instruments used in carrying out different tests, and the objects of such tests. Squadron-Leader England will give his views upon how performance testing could be improved from a practical standpoint.

This is the second of the series of lectures of the present session arranged for delivery before the newly amalgamated body of The Royal Aeronautical Society and the Institution of Aeronautical Engineers. The third lecture will be given on October 20th by Mr. M. L. Bramson, A.C.G.I., A.F.R.Ae.S., M.I.Ae.E., on "Safety Devices for Aircraft."

J. LAURENCE PRITCHARD, Secretary.



An I.L.A. Trophy for Women Pilots

WOMEN of today have such a variety of interests that it is only natural that they should turn to aviation as a new field to conquer. Recognizing this, the International League of Aviators, of which Mr. Clifford B. Harmon is President, with President Gaston Doumergue, of France, as Honorary President of the French Section, has decided to encourage feminine interest in flying. Several nations already have granted brevets to women pilots, and during the coming year the movement is expected to assume considerable importance. Next spring, when the League's international and national trophies are awarded, there will be a new trophy, reserved entirely for women pilots. It will consist of a valuable piece of art, upon which will be inscribed the names of the winners annually. The trophy itself is to be kept in the League's clubhouse in the Bois de Boulogne, but smaller duplicates of it will be presented to the winners. They may be of any nationality, and the award will be determined with full consideration of both record-breaking performances and persistent flying services in any part of the world. The League is also to award each trophy winner with a special parchment certificate, the design of which will be selected from entries in a prize competition among artists and students. Recent inquiry revealed that the League's "Scouts" in all of the twenty member nations have reported that governments are alive to the utility of women in commercial flying particularly, but are averse to encouraging "stunts." This is in keeping with the League's policy, which last year awarded the Harmon trophy to Shirley Short, an American mail pilot.

Moths for Canada

THE Canadian Government has ordered eight Moths from the De Havilland Company for their four Canadian light 'plane clubs.

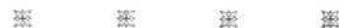
A NEW MARCONI AERIAL (W.T.) WINCH FOR AIRCRAFT

AN improved type of wireless aerial winch for use on aircraft has been placed on the market by Marconi's Wireless Telegraph Co., Ltd. Aerials generally in use on aircraft consist of a length of wire, suitably weighted at the end, which is paid out through the fuselage to the required amount, and trails below the machine. It not infrequently occurs, when unwinding the aerial, that owing to sudden acceleration of the winch, etc., the aerial breaks and is lost.

The new Marconi winch has been designed to avoid this, which it does by means of a mechanism which predetermines the rate at which the aerial wire may be run out. When the locking handle on the winch is disengaged from its "lock" position, the aerial wire, under the action of the weight fixed at its extremity, commences to unwind. If the drum of the winch tends to exceed a certain speed of rotation, a centrifugal device fitted inside the drum, automatically puts on a brake to retard the speed. The aerial therefore unwinds smoothly, without sudden accelerations, so that there is no possibility of the wire being wrenched off the drum. When using an aerial 200 ft. in length, about 2 mins. are required to let out the aerial to its full length.

To wind in the aerial, the locking switch is placed in its "lock" position, which brings into action a "free-wheel" mechanism. This allows the wire to be wound in, but prevents the wire running back again. Should, for some reason or other, the attention of the pilot be taken by other matters while winding in the aerial, he can take his hand off the winch and the mechanism will remain stationary, without the necessity of having to bring into action a special locking device to fix the drum in its position.

It will be seen, therefore, that this new winch is a decided improvement on the ordinary type of winch, and should prove to be a great convenience to pilots and operators in charge of wireless on aircraft.



PUBLICATIONS RECEIVED

Deutsche Kraftfahrzeug-Typenschau. Vol. I. Luftfahrzeuge und Luftfahrzeugmotoren, 1927. Deutsche Motor-Zeitschrift G.m.b.H., Müller-Bersetz-Strasse 17, Dresden. Price M.2.30.

Einführung in die Theoretische Aerodynamik. By C. Eberhardt. R. Oldenbourg, Glückstrasse 8, Munich. Price M.9.50.

Aeronautical Research Committee Reports and Memoranda No. 1063 (Ae. 245).—Model Experiments on R.A.F. 31 Aerofoil with Handley Page Slot. By H. B. Irving, A. S. Batson and D. H. Williams. October, 1926. Price 6d. net. No. 1064 (Ae. 246).—The Effects of Stagger and Gap on the Aerodynamic Properties of Biplanes at Large Angles of Incidence. By H. B. Irving and A. S. Batson. May, 1927. Price 1s. 9d. net. H. M. Stationery Office, Kingsway, London, W.C.2.



AERONAUTICAL PATENT SPECIFICATIONS

(Abbreviations: Cyl. = cylinder; i.c. = internal combustion; m. = motor. The numbers in brackets are those under which the Specifications will be printed and abridged, etc.)

APPLIED FOR IN 1926

Published October 13, 1927

- 14,973. G. SWEETNAM and A. J. SMYE. Marine and aerial propellers. (277,413.)
33,068. L. CHAUVIERE and G. MICHEL. Method of mounting propellers. (263,871.)

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